BUSH HOG®

Trail Series

OFF ROAD UTILITY VEHICLES
Operator's Manual

MODELS

TH420
TH440
TH4200
TH4400

BUSH HOG®
Performance You Can Count On℠

ASSEMBLY • OPERATION • MAINTENANCE

107 $10.00 50044549

CONGRATULATIONS!

You have invested in the best vehicle of its type on the market today.

The care you give your Bush Hog vehicle will greatly determine your satisfaction with its performance and its service life. We urge a careful study of this manual to provide you with a thorough understanding of your new vehicle before operating, as well as suggestions for operation and maintenance.

If your manual should become lost or destroyed, Bush Hog will be glad to provide you with a new copy. Order from Bush Hog, P. O. Box 1039, Selma, Alabama 36702-1039. Most of our manuals can also be downloaded from our website at www.bushhog.com.

As an authorized Bush Hog dealer, we stock genuine Bush Hog parts which are manufactured with the same precision and skill as our original equipment. Our trained service personnel are well informed on methods required to service Bush Hog equipment, and are ready and able to help you.

Should you require additional information or assistance, please contact us.

YOUR AUTHORIZED BUSH HOG DEALER

BECAUSE BUSH HOG MAINTAINS AN ONGOING PROGRAM OF PRODUCT IMPROVEMENT, WE RESERVE THE RIGHT TO MAKE IMPROVEMENTS IN DESIGN OR CHANGES IN SPECIFICATIONS WITHOUT INCURRING ANY OBLIGATION TO INSTALL THEM ON UNITS PREVIOUSLY SOLD.

BECAUSE OF THE POSSIBILITY THAT SOME PHOTOGRAPHS IN THIS MANUAL WERE TAKEN OF PROTOTYPE MODELS, PRODUCTION MODELS MAY VARY IN SOME DETAIL. IN ADDITION, SOME PHOTOGRAPHS MAY SHOW SHIELDS REMOVED FOR PURPOSES OF CLARITY. **NEVER OPERATE** THIS IMPLEMENT WITHOUT ALL SHIELDS IN PLACE.

BUSH HOG®
Trail Series Utility Vehicles
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RETAIL CUSTOMER'S RESPONSIBILITY UNDER THE BUSH HOG WARRANTY

It is the Retail Customer and/or Operator's responsibility to read the Operator's Manual, to operate, lubricate, maintain and store the product in accordance with all instructions and safety procedures. Failure of the operator to read the Operator's Manual is a misuse of this equipment.

It is the Retail Customer and/or Operator's responsibility to inspect the product and to have any part(s) repaired or replaced when continued operation would cause damage or excessive wear to other parts or cause a safety hazard.

It is the Retail Customer's responsibility to deliver the product to the authorized Bush Hog Dealer, from whom he purchased it, for service or replacement of defective parts which are covered by warranty. Repairs to be submitted for warranty consideration must be made within thirty (30) days of failure.

It is the Retail Customer's responsibility for any cost incurred by the Dealer for traveling to or hauling of the product for the purpose of performing a warranty obligation or inspection.

BUSH HOG®
Performance You Can Count On℠

LIMITED WARRANTY

Bush Hog warrants to the original purchaser of any new Bush Hog equipment, purchased from an authorized Bush Hog dealer, that the equipment be free from defects in material and workmanship for a period of one (1) year for non-commercial, state, and municipalities' use and ninety (90) days for commercial use from date of retail sale. The obligation of Bush Hog to the purchaser under this warranty is limited to the repair or replacement of defective parts.

Replacement or repair parts installed in the equipment covered by this limited warranty are warranted for ninety (90) days from the date of purchase of such part or to the expiration of the applicable new equipment warranty period, whichever occurs later. Warranted parts shall be provided at no cost to the user at an authorized Bush Hog dealer during regular working hours. Bush Hog reserves the right to inspect any equipment or parts which are claimed to have been defective in material or workmanship.

DISCLAIMER OF IMPLIED WARRANTIES & CONSEQUENTIAL DAMAGES

Bush Hog's obligation under this limited warranty, to the extent allowed by law, is in lieu of all warranties, implied or expressed, **INCLUDING IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE** and any liability for incidental and consequential damages with respect to the sale or use of the items warranted. Such incidental and consequential damages shall include but not be limited to: transportation charges other than normal freight charges; cost of installation other than cost approved by Bush Hog; duty; taxes; charges for normal service or adjustment; loss of crops or any other loss of income; rental of substitute equipment, expenses due to loss, damage, detention or delay in the delivery of equipment or parts resulting from acts beyond the control of Bush Hog.

CONTINUED

CONTINUED

THIS LIMITED WARRANTY SHALL NOT APPLY:

1. To vendor items which carry their own warranties, such as engines, tires, and tubes.

2. If the vehicle has been subjected to misapplication, abuse, misuse, negligence, fire or other accident.

3. If parts not made or supplied by Bush Hog have been used in connection with the vehicle, if, in the sole judgement of Bush Hog such use affects its performance, stability or reliability.

4. If the vehicle has been altered or repaired outside of an authorized Bush Hog dealership in a manner which, in the sole judgement of Bush Hog, affects its performance, stability or reliability.

5. To normal maintenance service and normal replacement items such as gearbox lubricant, or to normal deterioration of such things as belts and exterior finish due to use or exposure.

6. To expendable or wear items such as teeth, chains, sprockets, belts, springs and any other items that in the company's sole judgement is a wear item.

NO EMPLOYEE OR REPRESENTATIVE OF BUSH HOG IS AUTHORIZED TO CHANGE THIS LIMITED WARRANTY IN ANY WAY OR GRANT ANY OTHER WARRANTY UNLESS SUCH CHANGE IS MADE IN WRITING AND SIGNED BY BUSH HOG'S SERVICE MANAGER, POST OFFICE BOX 1039, SELMA, ALABAMA 36702-1039.

Record the model number, serial number and date purchased. This information will be helpful to your dealer if parts or service are required.

MODEL NUMBER _____

SERIAL NUMBER _____

DATE OF RETAIL SALE _____

DEALER PREPARATION CHECK LIST

UTILITY VEHICLE

BEFORE DELIVERING MACHINE — The following check list should be completed. Use the Operator's Manual as a guide.

- ❒ 1. Engine has been serviced.
- ❒ 2. Battery fluid level is checked.
- ❒ 3. All warning lights checked for operation.(Engine oil, park brake, & neutral light)
- ❒ 4. Assembly completed
- ❒ 5. All fittings lubricated.
- ❒ 6. All shields in place and in good condition.
- ❒ 7. All fasteners torqued to specifications given in Torque Chart.
- ❒ 8. All decals in place and readable. (See decal page.)
- ❒ 9. Overall condition good (i.e. paint, welds)
- ❒ 10.Parking brake checked and adjusted, if necessary.
- ❒ 11. Steering checked and adjusted, if necessary.
- ❒ 12.Check tire pressure.
- ❒ 13.Operators manual has been delivered to owner and he has been instructed on the safe and proper use of the utility vehicle.

Dealer's Signature _____

Purchaser's Signature _____

THIS CHECKLIST TO REMAIN IN OWNER'S MANUAL

It is the responsibility of the dealer to complete the procedures listed above before delivery of this vehicle to the customer.

Safety Alert Symbol

This Safety Alert Symbol means:

"ATTENTION! BECOME ALERT! YOUR SAFETY IS INVOLVED!"

This symbol is used to call attention to safety precautions that should be followed by the operator to avoid accidents. When you see this symbol, carefully read the message that follows and heed its advice. Failure to comply with safety precautions could result in death or serious bodily injury.

Safety Signs *Signal Words*

The signal words **DANGER, WARNING, AND CAUTION** are used on the equipment safety signs. These words are intended to alert the viewer to the existence and the degree of hazard seriousness.

⚠DANGER

This signal word indicates a potentially hazardous situation which, if not avoided, will result in death or serious injury.

⚠WARNING

This signal word indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury

⚠ CAUTION

This signal word indicates a potentially hazardous situation exist which, if not avoided, may result in minor or moderate injury. It may also be used to alert against unsafe practices.

IMPORTANT SAFETY PRECAUTIONS

This symbol is used to call attention to safety precautions that should be followed by the operator to avoid accidents. When you see this symbol, carefully read the message that follows and heed its advice. Failure to comply with safety precautions could result in serious bodily injury.

In addition to the design and configuration of equipment, hazard control and accident prevention are dependent upon the awareness, concern, prudence and proper training of personnel in the operation, transport, maintenance and storage of equipment. Lack of attention to safety can result in accident, personal injury, reduction of efficiency and worst of all—loss of life. Watch for safety hazards and correct deficiencies promptly. Use the following safety precautions as a general guide to safe operations when using this machine. Additional safety precautions are used throughout this manual for specific operating and maintenance procedures. Read this manual and review the safety precautions often until you know the limitations.

IMPORTANT OPERATOR SAFETY PRACTICES:

BEFORE OFF-ROAD UTILITY VEHICLE USE:

- Read, understand and follow all the Operator's Manual instructions.
- Explain all instructions to operators who cannot read or understand the instructions.
- Only allow vehicles to be operated by trained persons.
- Allow no persons younger than 16 years old to operate.
- Do not operate under the influence of alcohol or drugs.
- Inspect vehicle for safe operating condition.

DURING OFF-ROAD UTILITY USE:

- Fasten seat belt.
- Use vehicle only for off-road operations.
- Avoid sudden starts, stops, turns, or direction reversals to prevent load shifts, endanger passengers, or losing vehicle control.
- Use speeds to allow vehicle to stop safely and be under control in all travel conditions.
- Reduce speeds for wet, slippery, loose surfaces, steep grades and unfamiliar terrain.
- Never operate vehicle on hills steeper than 15 degree slope.
- Use proper loading and securing material for loads in cargo box and trailers.
- Use proper towing practices.

- Do not tow heavy loads on hills steeper than 5 degree slope.
- Avoid driving through water exceeding floorboard height.
- Before leaving, servicing, or adjusting the vehicle, stop engine, set parking brake, remove key, wait for engine and all moving parts to stop.

AVOID VEHICLE RUNOVER AND RIDER OR OPERATOR FALL OFF:

- Only allow persons to ride in seats equipped with seat belts.
- All persons fasten seat belts when riding.
- Allow no riders in cargo box or on vehicle.
- Keep all persons clear of operating vehicle.
- Keep alert for stumps, holes, ruts, wet, slippery and uneven terrain.
- Before backing up or turning, look behind and around vehicle for persons.

AVOID VEHICLE UPSETS AND ROLLOVER:

- Avoid sudden starts, stops, or turns.
- Use very slow speed when turning.
- Always use brakes when going down slope.
- Reduce speed and load on rough or hilly terrain.
- Avoid overloading vehicle and shifting loads.
- Keep alert for stumps, holes, ruts, wet, slippery and uneven terrain.

AVOID FUEL FIRE AND EXPLOSIONS:

- Stop engine and allow to cool before refueling.
- Do not smoke while refueling.
- Never fill fuel tank indoors.
- Clean up spilled fuel before starting engine.
- Only use approved Underwriter's Laboratory (U.L.) or American Society for Testing & Material (ASTM) non-metal portable fuel containers.
- Remove fuel containers from vehicle beds or trunks and placing on the ground before filling.
- Keep nozzle in contact with fuel container opening while filling.
- Remove utility vehicle and equipment from truck beds or trailers and re-fuel on the ground.

CARGO BOX LOAD OPERATIONS:
LOADING:

- Do not exceed vehicle's Gross Vehicle Weight (GVW) rating. This includes vehicle operating weight, material load (cargo box load), personnel weight, options weight, accessories weight, and attachments weight (towing loads).
- Do not exceed cargo box load rating.
- Confine loads to cargo box physical dimensions.
- Spread load evenly and securely anchor all loads in cargo box. Shifting and uneven loads will effect vehicle control and stability.
- Avoid sudden starts, stops, and turns which could cause load shifts.

- Reduce loads and speed when operating over rough or hilly terrain.
- Use low vehicle speeds when operating with cargo box loads. Heavy loads will affect steering, braking, stability, and overall handling of the vehicle. Limit loads to those that can be safely controlled.
- Allow for increased braking distance.

UNLOADING:
- Stop vehicle on level ground, set parking brake before raising cargo box.
- Avoid unloading or dumping on slopes, hills or inclines.

MANUALLY RAISED CARGO BOX UNITS:
- Unload manual lift cargo box before raising cargo box by hand.
- Securely lock manual support lift rod before working beneath raised cargo box.
- Fully lower cargo box and securely re-latch lift rod before operating vehicle.

OPTIONAL ELECTRIC POWER LIFT CARGO BOX UNITS:
- Operate switch while seated in operator seat.
- Keep body parts away from cargo box and all bystanders away from vehicle.
- Do not dump or unload vehicle parked on an incline, slopes, hills, or with rear wheels at an edge of a drop-off. The cargo box weight may shift and cause the vehicle to tip or rollover.
- Fully lower cargo box before operating vehicle.

TOWING OPERATIONS:
- Do not exceed vehicle's Gross Vehicle Weight (GVW) rating. This includes vehicle operating weight, material load (cargo box load), personnel weight, options weight, accessories weight, and attachment weight (towing loads).
- Always use approved rear hitch point.
- Do not tow a load weight (trailer weight and cargo weight) that exceeds towing weight rating.
- Do not exceed the tongue weight rating.
- Never exceed 16 km/h (10 mph)when towing loads. Use slow speeds to maintain control of vehicle and towing load.
- Allow for increased braking distance from towed load weight.
- Do not tow heavy loads on slopes greater than 5 degree incline.
- Heavy towed equipment may jackknife and cause utility vehicle to overturn when going downhill or turning.

CONTROLLING PARTY INFORMATION

(Reference: SAE J2258-DEC 2003-Light-Utility Vehicle, APPENDIX B, PART II - For the Controlling Party.) The Controlling Party is the person(s) or organization(s) responsible for the operation and maintenance of a vehicle.

MAINTENANCE AND OPERATIONS:

The Controlling Party should perform the following:

- Properly use and maintain utility vehicle to avoid serious injury or death.
- Follow additional specific safety practices as may reasonably be required for safe operations.
- Perform periodic safety survey of vehicle operating areas.
- Identify operating area hazards.
- Identify areas where vehicle should not be operated.

SAFETY SURVEY:

The Controlling Party should conduct an operating area safety survey to identify possible hazards:

- Steep Grade Hazards:
  - Restrict vehicle operations to designated pathways in steep grade areas.
  - Erect steep grade warning signs.
  - State: “Warning, steep grade, descend slowly” on signs.
- Loose Terrain Hazards:
  - Keep vehicle traction, steering, stability and braking under control by avoiding loose terrain areas.
- Wet area Hazards:
  - Keep vehicle traction, steering, stability and braking under control by avoiding wet areas.
- Sharp Turns, Blind Corners, Bridge Approaches Hazards:
  - Erect warning signs,
  - State precautions to avoid the hazards on signs.
- Pedestrian and Utility Vehicle Traffic Hazards:
  - Erect warning signs.
  - State warnings of traffic conditions and use caution on signs.
  - Reroute vehicle or pedestrian traffic to avoid interference.

OPERATOR TRAINING:
The controlling Party should develop, conduct an operator-training program and permit only properly trained persons to operate the utility vehicle.

OPERATOR-TRAINING PROGRAM:
The program should include, as a minimum, the following:

Review:
- Vehicle operator's manual instructions.
- Vehicle's safety decals.
- Safe loading practices.
- Proper use of vehicle's controls and consequences of improper use.
- Controlling Party's safety practices developed from operating area safety survey.

Review conditions that affect vehicle's stability and may cause its instability:
- Operator's failure to follow safety practices.
- Operator's exercise of judgement.
- Operating area slopes, grades, and terrain conditions.
- Vehicle's speed, turning, braking, loadings, towing and dynamic forces.
- Attachments and improper loading.

The Controlling Party should train and evaluate vehicle operator's competency to comply with these practices.

MAINTENANCE AND INSPECTION PROCEDURES:
- Review and perform vehicle manufacturer's recommended procedures.
- Use a scheduled preventive maintenance, lubrication, and inspection program.
- Use trained and authorized personnel to maintain, repair, adjust, and inspect vehicles
- Conduct recommended procedures in a properly ventilated work area.
- Use original vehicle manufacturer's replacement parts.
- Use recommended procedures for returning vehicle to service.
- Use recommended procedures for returning vehicle to service.
- Conduct vehicle performance checks in an area free of vehicular and pedestrian traffic.
- Use vehicle manufacturer's engine shut down and vehicle immobilization recommended procedures before undertaking maintenance or repairs.
- Chock wheels and block chassis before working underneath vehicle.
- Do not use open flames to check level or leakage of fuel, battery electrolyte, or coolant.
- Equip work area with fire extinguisher equipment.
- Follow vehicle manufacturer's recommended inspection and maintenance procedures.

FUEL SYSTEM:

- Check for leaks and condition of parts.
- Before disconnection fuel system parts and making repairs:
  - Allow engine to run until fuel system is depleted.
  - Allow engine to stop.
  - Allow engine to cool.
  - Disconnect battery.

CONDUCT PERIODIC INSPECTION ON THE FOLLOWING SYSTEMS:

- Brake system.
- Steering system.
- Electrical system.
- Transmission system.
- Exhaust system.
- Warning system.
- Switches and devices.
- Follow vehicle manufacturer's recommended inspection maintenance procedures.
- Keep vehicle clean to reduce fire hazards and allow ease of vehicle inspection.

VEHICLE INSTRUCTION AND SAFETY DECALS:

- Keep clean and legible.
- Replace illegible decals.

VEHICLE MODIFICATION AND ADDITIONS:

- Contact vehicle manufacturer before making modifications that affect vehicle capacity and safe vehicle operations.

⚠ WARNING

POTENTIAL HAZARD
Stalling, rolling backwards while climbing a hill

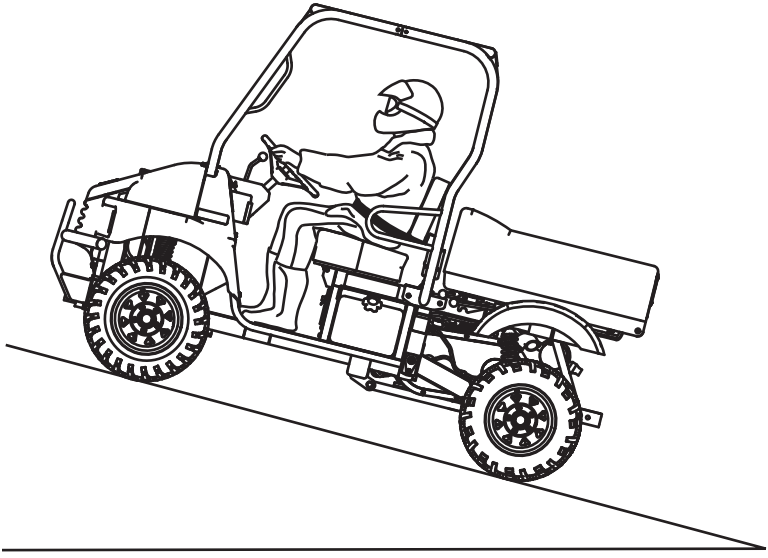
WHAT CAN HAPPEN
Vehicle overturn

HOW TO AVOID THE HAZARD
Maintain a steady speed when climbing a hill

If you lose forward speed:
Apply the brakes.
Lock the parking brake after fully stopped.

If you begin rolling backwards:
Never apply engine power.
Apply the brake gradually.
When fully stopped, lock parking brake.

In the event of an accident, have a qualified service dealer check the complete vehicle for possible damage, including (but not limited to) brakes, throttle and steering.



⚠ WARNING

POTENTIAL HAZARD
Operating this vehicle on paved surfaces

WHAT CAN HAPPEN
Loss of control

HOW TO AVOID THE HAZARD
This vehicle's tires are designed for off-road use only, not for use on pavement. Paved surfaces may seriously affect handling and control of the vehicle, and may cause the vehicle to go out of control.

Avoid operating the vehicle on pavement. If you must operate on a paved surface, travel slowly and do not make sudden turns or stops.

⚠ WARNING

POTENTIAL HAZARD
Operating this vehicle without proper instruction

WHAT CAN HAPPEN
Loss of control, accident

HOW TO AVOID THE HAZARD
The risk of an accident is greatly increased if the operator does not know how to operate the vehicle properly in different situations and on different types of terrain.

All opertors must read and understand the Operator's manual and all warning and instruction labels before operating the vehicle.

⚠ WARNING

POTENTIAL HAZARD
Operating this vehicle on public streets, roads or highways

WHAT CAN HAPPEN
Collision with another vehicle

HOW TO AVOID THE HAZARD
Never operate this vehicle on any public street, road or highway, including dirt or gravel.

In many states it's illegal to operate vehicles of this type on public streets, roads and highways.

⚠ WARNING

POTENTIAL HAZARD
Operating this vehicle after consuming alcohol or drugs

WHAT CAN HAPPEN
Could seriously affect your judgment.
Could cause you to react more slowly.
Could affect your balance and perception.
Could result in an accident.

HOW TO AVOID THE HAZARD
Driving this vehicle requires your full attention. DO NOT drink alcohol or use drugs or medications before or while driving. They will reduce your alertness and slow your reaction time. In most states and provinces, it's prohibited by law to drive while intoxicated or under the influence of drugs.

⚠ WARNING

POTENTIAL HAZARD
Operating this vehicle at excessive speeds

WHAT CAN HAPPEN
Loss of control, accident

HOW TO AVOID THE HAZARD
Always travel at a speed proper for the terrain, visibility and operating conditions, and your experience.

⚠ WARNING

POTENTIAL HAZARD
Attempting jumps and other stunts

WHAT CAN HAPPEN
Loss of control, accident and/or vehicle overturn

HOW TO AVOID THE HAZARD
Never attempt jumps and other stunts. Avoid exhibition driving.

⚠ WARNING

POTENTIAL HAZARD
Operating on frozen bodies of water.

WHAT CAN HAPPEN
Severe injury or death can result if the vehicle and/or the operator fall through the ice.

HOW TO AVOID THE HAZARD
Never operate the vehicle on a frozen body of water.

⚠ WARNING

POTENTIAL HAZARD
Failure to inspect the vehicle before operating
Failure to properly maintain the vehicle

WHAT CAN HAPPEN
Accident, equipment damage

HOW TO AVOID THE HAZARD
Always inspect your vehicle before each use to make sure it's in safe operating condition.
Always follow the inspection and maintenance procedures and schedules described in the Operator's Manual.

⚠ WARNING

POTENTIAL HAZARD
Failure to use extra caution when operating this vehicle on unfamiliar terrain

WHAT CAN HAPPEN
Loss of control, vehicle overturn

HOW TO AVOID THE HAZARD
Travel slowly and use extra caution when operating on unfamiliar terrain.
always be alert to changing terrain conditions when operating the vehicle. May come upon hidden conditions when operating the vehicle. You may come upon hidden rocks, bumps, or holes suddenly, without enough time to react.

⚠ WARNING

POTENTIAL HAZARD
Failure to follow the minimum age recommendations for this vehicle.

WHAT CAN HAPPEN
Serious injury or death (the child or others)

HOW TO AVOID THE HAZARD
Only persons with a valid driver's license should operate this vehicle.
Even though a child may be within the age group for which some vehicles are recommended, he or she may not have the skills, abilities, or judgement needed to operate the vehicle safely and may be involved in a serious accident.

⚠ WARNING

POTENTIAL HAZARD
Operating this vehicle with improper tires or with improper or uneven tire pressure

WHAT CAN HAPPEN
Loss of control, accident and/or overturn

HOW TO AVOID THE HAZARD
Always use the size and type of tires specified in the Operator's Manual for this vehicle.
always maintain proper tire pressure as described on the decal and in the Operator's Manual.

⚠WARNING

Leaving the keys in the ignition can lead to unauthorized use of the vehicle resulting in serious injury or death. Always remove the ignition key when the vehicle is not in use.

⚠WARNING

After any overturn or accident, have a qualified service dealer inspect the entire vehicle for possible damage, including (but not limited to) brakes, throttle and steering systems.

⚠WARNING

Always keep combustible materials away from the exhaust system. Exposure to the hot components could result in a fire.

⚠WARNING

Gasoline is highly flammable and is explosive under certain conditions. Always exercise extreme caution whenever handling gasoline.
Always stop the engine when refueling.
Always refuel outdoors or in a well ventilated area.
Do not smoke or allow open flames or sparks in or near the refueling area or where gasoline is stored.
Do not over fill the tank. Do not fill the tank neck.
If gasoline spills on your skin or clothing, immediately wash it off with soap and water and change clothing.
Never start the engine or let it run in an enclosed area.
Gasoline powered engine exhaust fumes are poisonous and can cause loss of consciousness and death in a short time.

SECTION I
INTRODUCTION AND DESCRIPTION

INTRODUCTION

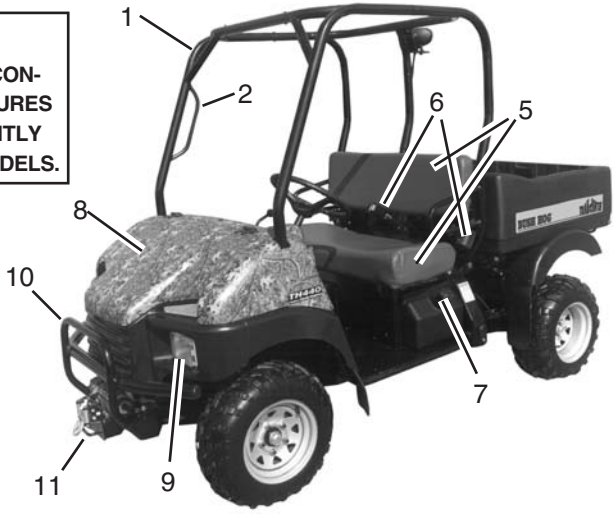
We are pleased to have you as a Bush Hog customer. Your Bush Hog Trail Series utility vehicle has been carefully designed to give maximum service with minimum down time. This manual is provided to give you the necessary operating and maintenance instructions for keeping your vehicle in top operating condition. Please read this manual thoroughly. Understand what each control is for and how to use it. Observe all safety precautions decaled on the machine and noted throughout the manual for safe operation of the vehicle. If any assistance or additional information is needed, contact your authorized Bush Hog dealer.

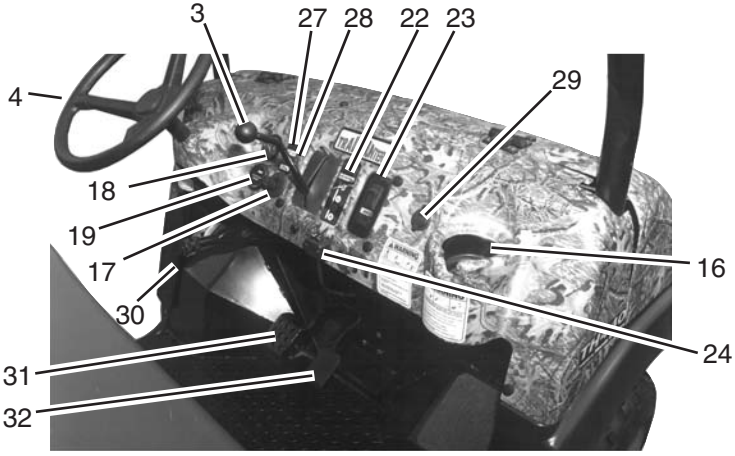
DESCRIPTION (Trail Hunter shown on next page)

1. Occupant Protection Structure (O.P.S.)
2. Hand hold
3. Gear Selector
4. Steering wheel
5. Seat
6. Seat Belt
7. Fuel Tank Cap
8. Battery (Under Hood)
9. Headlights
10. Front Bumper/ Brush Guard
11. Power Winch (Optional)
12. Cargo Light (Optional)
13. Cargo Box
14. Hitch Receiver
15. Winch Wiring Pigtail
16. Cup Holder
17. Ignition Key
18. Fuel Gauge
17. Ignition Key
18. Fuel Gauge
19. Hour Meter
20. Choke Knob
21. Power Bed Lift Switch (Optional)
22. Neutral Light
23. 4-Wheel Drive Switch and Light
24. Winch Switch (Optional)
25. Driving Light Switch
26. Cargo Bed Light Switch
27. Parking Brake Light
28. Oil Pressure Light
29. DC Power Outlet
30. Parking Brake
31. Brake Pedal
32. Throttle Pedal
33. Tailgate Latch
34. Cargo Box Release Handle

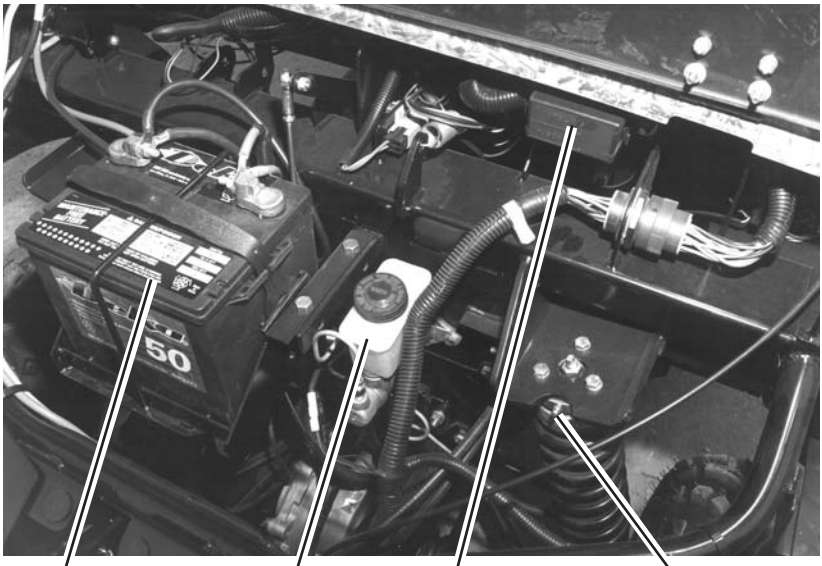
NOTICE!

LOCATIONS OF CONTROLS AND FEATURES MAY VARY SLIGHTLY ON DIFFERENT MODELS.

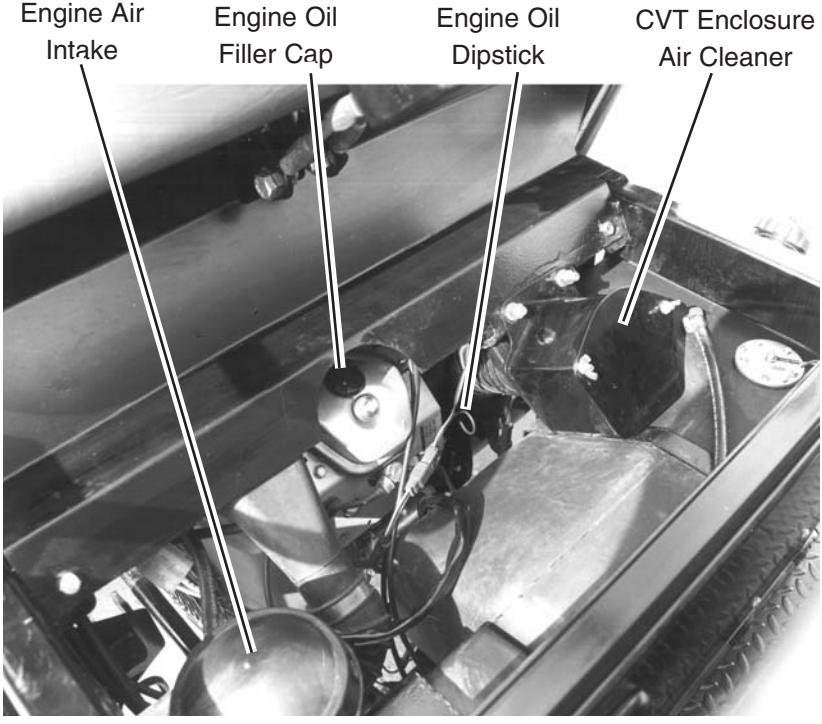




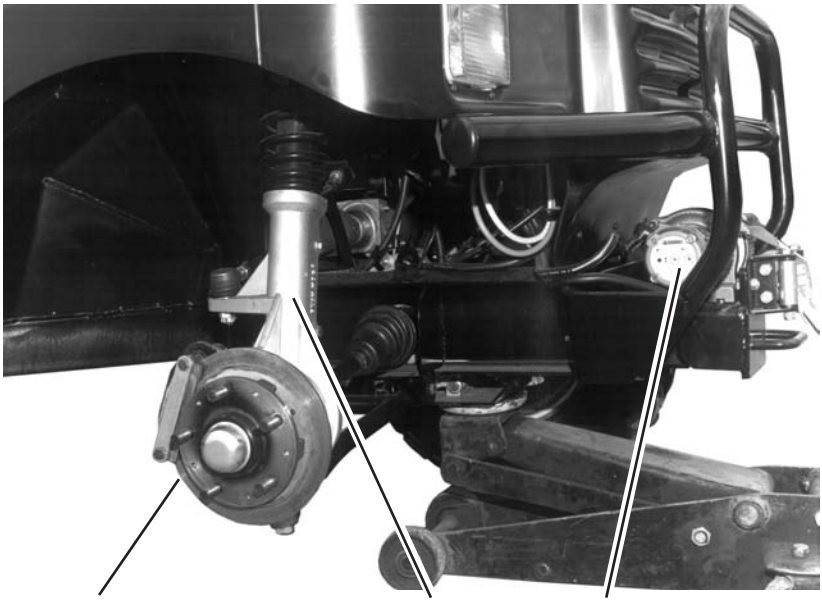
UNDER HOOD AREA (WITH CARGO TRAY REMOVED)



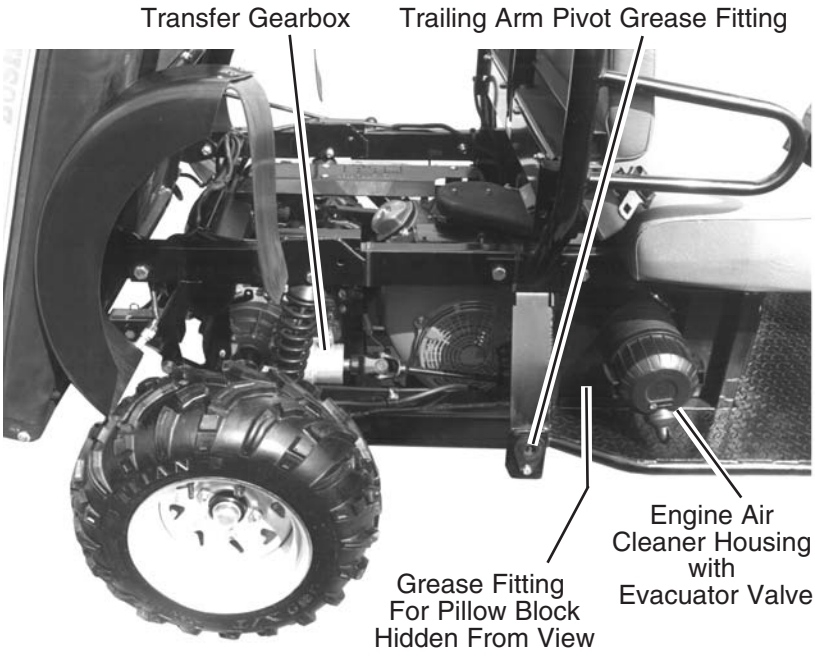
UNDER SEAT AREA



RIGHT FRONT WHEEL REMOVED



CARGO BED RAISED (SHOWING ENGINE COMPARTMENT)



FEATURES

DC Power Outlet

The 12 volt accessory port is provided to power auxiliary lights or other accessories.

Indicator Lights

Lights on the dash indicate when the transmission is in neutral. Four wheel drive models have a light that indicates when 4- wheel drive is engaged. An oil pressure light indicates when oil pressure is lower than normal and oil level needs to be checked.

Trailer Hitch Receiver

This vehicle is equipped with receiver hitch brackets at the front and rear for use with trailer hitches or the optional winch kit. Trailer towing equipment if not supplied with this vehicle.
To avoid injury and property damage, observe the precautions on page 43.

Seat Belts

The Bush Hog Trail Series is equipped with lap-style seat belts for the operator and passengers.

⚠ WARNING

Falling from a moving vehicle could result in serious injury or death. Always fasten your seatbelt securely before operating or riding in the vehicle.

Passengers under five years of age require special restraints, which are not available on this vehicle. No person under the age of five years may ride in the Bush Hog utility vehicle.

To wear the seat belt properly, follow this procedure:
1. Place the belt across your lap as low on your hips as possible, taking care that the belt is not twisted.
2. Push the latch plate into the buckle until it clicks.
3. Release the strap, it will self tighten.

To unfasten, press the red button on the side of the buckle.

CONTROLS

Switches

Ignition Switch

The ignition switch is a three position, key-operated switch. The key can be removed from the switch when it is in the OFF position.

OFF	Engine off. All electrical circuits are off except ACC. 12V.
ON	Electrical circuits are on. Electrical equipment can be used
START	Electric starter is engaged by holding ignition switch key in this position. Upon release, the key will return to the ON position.

⚠ WARNING

LEAVING THE KEYS IN THE IGNITION CAN LEAD TO UNAUTHORIZED USE OF THE VEHICLE RESULTING IN SERIOUS INJURY OR DEATH. ALWAYS REMOVE THE IGNITION KEY WHEN THE VEHICLE IS NOT IN USE.

Light Switch

Turn the headlights and tailights on by flipping the rocker switch up (the ignition switch must be in the ON position). Flip the switch down to turn the lights off.

Cargo Bed Light Switch (Optional)

Flip the rocker switch up to turn on and down to turn off.

Power Bed Lift Switch (Optional)

Push and hold the spring loaded rocker switch up to raise the bed or down to lower the bed.

4-Wheel Drive Switch (On 4-wheel drive models only)

Flip the rocker switch up to engage 4-wheel drive at any time and down to disengage 4-wheel drive.

Winch Switch (Optional)

Push and hold the spring loaded rocker switch to the left to unwind the cable or push and hold to the right to wind in the cable.

Brake Pedal
The brake pedal is the left pedal on the floor board. Depress the brake pedal to slow or stop the vehicle.

Throttle Pedal
The throttle pedal is the right pedal on the floor board. Push the pedal down to increase engine speed. Spring pressure returns the pedal to the rest position when released. Always check to make sure that the pedal returns normally before starting the engine.

Parking Brake Lever
The parking brake lever is located under the dash and is rotated back and upward to engage and pushed down and forward to release. . Make sure the parking brake is working properly before each operation.

Gear Selector
The transmission gear selector is located on the console to the right of the steering wheel. It has four positions: high, low, neutral, and reverse.

NOTE: Low gear is the primary driving range on this vehicle. High is intended for use in hard packed surfaces with light loads

To change gears, stop the vehicle and with the engine idling, move the gear lever to the desired gear. Do not attempt to shift gears with the engine speed above idle or while the vehicle is moving.

Always place the transmission in gear with the parking brake locked whenever the vehicle is left unattended.

Maintaining shift linkage adjustment is important to assure proper transmission function. See your dealer if you experience any shifting problems.

⚠ CAUTION

DO NOT ATTEMPT TO SHIFT THE TRANSMISSION WHILE THE VEHICLE IS MOVING OR DAMAGE TO THE TRANSMISSION COULD RESULT.

ALWAYS PLACE THE TRANSMISSION IN GEAR WITH THE PARKING BRAKE APPLIED AND TURN THE VEHICLE OFF WHENEVER THE VEHICLE IS LEFT UNATTENDED.

SPECIFICATIONS

	TRAIL HUNTER		TRAIL HAND	
ENGINE	**TH420**	**TH440**	**TH4200**	**TH4400**
Type	4-cycle, OHV V-twin, air-cooled gas			
Make	Briggs & Stratton	Honda	Honda	Honda
HP / (cc)	16 hp (480cc)	20 hp (614CC)	24 hp (670cc)	
Lubrication	Full Pressure with automotive style spin-on canister			
Air Cleaner	Remote, 2-stage cyclone type with replacement dual elements			
Electrical Systems	12 volt DC with 20-amp alternator			

CHASSIS				
Suspension, Front	MacPherson strut, single A-Arm, coil-over-shock			
Suspension, Rear	Independent trailing arm, coil-over-shock			
Wheel travel, Frt/Rr	5.7 inches / 4.4 inches		5.7 inches / 6.0 inches	
Steering	Rack and Pinion			
Turning Radius	13 ft			
Front Tires	AT 23 x 8.0 - 12 NHS		AT 25 x 10.0 - 12 NHS	
Rear Tire	AT 23 x 10.0 - 12 NHS		AT 25 x 11.0 - 12 NHS	
Brakes	4-wheel hydraulic disc brakes; self-adjusting with tandem master cylinder			
Park Brake	Rear mechanical disc			
Ground Clearance	9-inches		10-inches	

SPECIFICATIONS

	TRAIL HUNTER		TRAIL HAND	
DRIVE TRAIN	**TH420**	**TH440**	**TH4200**	**TH4400**
Transmission	Continuously Variable Transmission (CVT)			
CVT Protection	Shielded (TH420 only), Fully enclosed pressurized with filtered air intake (TH440, TH4200 and TH4400)			
Final Drive	Bush Hog Dual-Range transaxle with High, Low, Neutral and Reverse			
Differential Lock	Truck-Style automatic positive locking differential; featuring Detroit Gearless Locker™			
Ground Speed	0 - 25 mph			
4WD (4wd models only)	True On-Demand 4-wheel drive; switch engage			
DIMENSIONS				
Dry Weight	1,270 lbs.	1,320 lbs.	1,450 lbs.	1,500 lbs.
Wheel Base	72 inches		76 inches	
Vehicle Load Capacity	1,250 lbs.		1,500 lbs.	
Cargo Box Load Capacity	750 lbs.		1,000 lbs.	
Towing Capacity	1,500 lbs.			
Fuel Capacity	7 gallons			
Seating Capacity	2		3	
Lights	Dual 37-watt halogen headlights, tail lights and brake lights			
Colors	Classic Bush Hog Red. Deep Forest Green and Mossy Oak's Obsession™ camouflage			
WARRANTY	One-year limited. See dealer for complete details. Two-year engine limited warranty administered through engine manufacturers.			

SECTION II
OPERATION

GENERAL SAFETY

Only qualified people familiar with this operator's manual should operate this machine.

⚠ WARNING

IF A PROPER INSPECTION IS NOT DONE BEFORE EACH USE, SEVERE INJURY OR DEATH COULD RESULT. ALWAYS INSPECT THE VEHICLE BEFORE EACH USE TO ENSURE IT'S IN PROPER OPERATING CONDITION.

PRE-OPERATION CHECKLIST

1. Fill the fuel tank with unleaded regular gasolIne.
2. Make sure dirt and foreign matter are kept out of fuel tank. Use a clean funnel and fuel can.
3. **Do not mix oil with gasoline.**
4. **Do not use white, high test or premium gasoline. Do not use de-icers, carburetor cleaners or othersuch additives.**
5. Check the crankcase oil level. Make sure the engine is off. The vehicle should be parked on a level area. Do not overfill. (See your engine manual for more detailed instructions.)
6. Check battery fluid level.
7. Check tire pressure: **Trail Hunter models require 18 psi in all four tires. Trail Hand models require 12 psi in all four tires.**
8. Clean the air intake screen on the engine if necessary.
9. Perform any other maintenance as it becomes necessary. (See "Maintenance" section)

VEHICLE BREAK-IN PERIOD

The break-in period for your new Bush Hog Utility Vehicle is defined as the first 24 hours of operation, or the time it takes to use the first two tanks full of fuel. A proper break-in procedure will result in more efficient performance and longer life for the engine. Carefully perform the following procedures.

Starting The Engine

⚠ WARNING

ENGINE EXHAUST GASES CONTAIN POISONOUS CARBON MONOXIDE.

- **NEVER RUN ENGINE IN A CLOSED BUILDING OR CONFINED AREA.**
- **AVOID INHALING EXHAUST GASES.**

1. Sit in the driver's seat and fasten the seat belt.
2. Lock the parking brake
3. Place the transmission in neutral.
4. Pull the choke control all the way out.
5. Turn the ignition key to START and crank for 10 seconds maximum.
6. If engine does not start, release ignition switch and wait five seconds; then turn the ignition switch for another five seconds. Repeat this procedure until engine starts. NOTE: do not press the accelerator pedal while starting the engine.
7. If the engine slows or stops, push the choke knob in half way.
8. Vary the engine RPM slightly with the throttle to aid in warm up until engine idles smoothly. Then push the choke all the way in.

Starting A Warm Engine

Warm engines do not normally require the use of the choke. Overuse of the choke can cause the spark plugs to become fouled.

1. Place the transmission in neutral and lock the parking brake.
2. Sit in the driver's seat with the seat belt fastened.
3. Turn the ignition key to START.
4. If the engine has cooled and does not readily start, intermittent use of the choke knob (pulled half way out) may be necessary.
5. If the engine is over-choked when warm, depress the throttle pedal fully while cranking to aid in starting.

6. Release the throttle pedal immediately after the engine starts.

NOTE: If the engine does not start and all conditions are favorable, change the spark plugs.

Driving The Vehicle

1. Check the surrounding area and determine your path of travel. Select an area which is open and will give you room to familiarize yourself with the operation and handling of the vehicle.
2. With foot on brake pedal, release parking brake and shift transmission into low gear.

3. With both hands on the steering wheel, release pressure on brake pedal and carefully apply pressure to throttle pedal. Vehicle speed is controlled by the amount of pressure on the throttle pedal. The CVT shifting is done automatically.

4. Drive slowly at first, practicing maneuvering and using the throttle and brakes on level surfaces.

5. Vary the throttle pedal position. Do not operate at sustained idle.

6. You may switch to 4-wheel drive at any time. It will only engage when the rear wheels begin to lose traction.

7. Do not exceed recommended towing capacity.

8. Perform regular checks on fluid levels, and all important areas on the vehicle as outlined on the pre-operation check list.

IMPORTANT

LOW GEAR IS THE PRIMARY GEAR FOR OPERATING THIS VEHICLE. HIGH IS INTENDED FOR USE ON HARD PACKED SURFACES WITH LIGHT LOADS. PREMATURE BELT WEAR IS THE RESULT OF OPERATING IN A GEAR THAT IS UNSUITABLE FOR THE TERRAIN.

TO CHANGE GEARS, STOP THE VEHICLE AND WITH THE ENGINE IDLING, MOVE THE LEVER TO THE DESIRED GEAR. DO NOT ATTEMPT TO SHIFT GEARS WITH THE ENGINE ABOVE IDLE OR WHILE MOVING.

⚠ WARNING

WHEN CARRYING CARGO OR TOWING A TRAILER, REMEMBER THAT LOAD WEIGHT WILL INCREASE BRAKING DISTANCES. FAILURE TO ALLOW FOR INCREASED BRAKING DISTANCES MAY RESULT IN ACCIDENT AND INJURY.

Braking

Practice starting and stopping (using the brakes) until you are familiar with the controls. **NOTE: When the accelerator is released completely and the engine speed drops to near idle, the vehicle has no engine braking.**

1. Release the throttle pedal completely.

2. Press on the brake pedal evenly and firmly.

Stopping The Engine

1. Release the throttle pedal completely

2. Place the transmission selector lever in neutral.

3. Apply the parking brake to help prevent the vehicle from rolling.

4. Turn the ignition key to the off position and remove the key.

⚠ WARNING

ALWAYS APPLY THE PARKING BRAKE BEFORE LEAVING THE VEHICLE. THE ENGINE/TRANSMISSION PROVIDES NO BRAKING EFFORT WHEN THE ENGINE IS NOT RUNNING. IF THE VEHICLE MOVES, IT MIGHT BE DAMAGED OR CAUSE INJURY.

⚠ CAUTION

EXHAUST SYSTEM COMPONENTS ARE VERY HOT DURING AND AFTER USE OF THE VEHICLE AND WILL CAUSE BURNS IF THEY COME IN CONTACT WITH SKIN.

Using The Cargo Box

⚠ CAUTION

NEVER EXCEED THE LOAD CAPACITY LISTED IN THE SPECIFICATIONS CHART FOR YOUR PARTICULAR VEHICLE. AN OVERLOADED CARGO BOX CAN CAUSE INSTABILITY DURING OPERATION OF THE VEHICLE.

⚠ WARNING

FAILURE TO ALLOW FOR INCREASED BRAKING DISTANCE WHEN HAULING CARGO OR TOWING A TRAILER MAY RESULT IN ACCIDENT AND INJURY. ALWAYS SLOW DOWN AND ALLOW ADDITIONAL BRAKING DISTANCE WHEN TOWING OR HAULING CARGO.

The tailgate of the cargo box can be opened by pulling up on the handle at the rear center of the tailgate.

The cargo box can be raised for dumping material or gaining access to the engine area. Models with the electric power lift feature only require pushing the rocker switch on the dash. Manual models require pulling the release handle (located under the front left corner of the cargo box) upward. (Refer to photograph on next page)

⚠ CAUTION

ON MODELS WITHOUT THE ELECTRIC POWER LIFT FEATURE, THE CARGO BOX SHOULD BE EMPTIED BEFORE ATTEMPTING TO LIFT THE BOX.

Load Distribution

1. Always load the cargo box placing the load as far forward as possible.

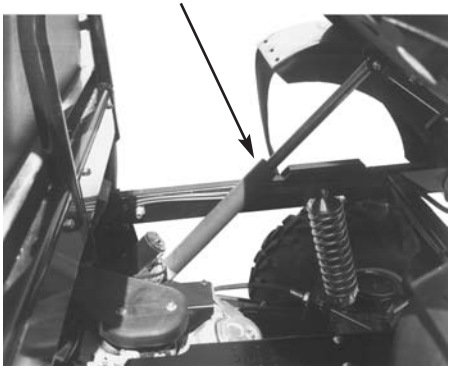
2. Always operate the vehicle with extreme care whenever hauling or towing loads.

3. Drive slowly with the transmission in low range.

4. Insure that the cargo box latch (on manual lift models) is securely latched before loading and operating. Unintentional box tilting may result if weight is place in the rear of the box and the latch is not secured.

⚠ WARNING

NEVER OPERATE THIS VEHICLE WITH THE CARGO BOX IN THE RAISED POSITION. THE CARGO BOX COULD CLOSE UNEXPECTEDLY WHILE DRIVING, SEVERELY INJURING THE DRIVER.



Driving Safely
Driving Procedures

1. Sit in the driver's seat with the seat belt fastened.

2. After starting the engine and allowing it to warm up, shift the transmission into gear.

3. Check your surroundings and determine your path of travel.

4. Release the parking brake.

5. Keeping both hands on the steering wheel, slowly depress the throttle with your right foot and begin driving. Vehicle speed is controlled by the amount of throttle opening and the CVT transmission shifting is automatic.

6. Drive slowly. Practice maneuvering and using the throttle and brakes on level surfaces.

NOTE: Low is the primary gear for operating this vehicle. High gear is intended for use on hard-packed surfaces with light loads.

Driving on Slippery Surfaces

When driving on slippery surfaces such as wet trails, loose gravel, or ice, be alert for the possibility of skidding and sliding. Under these conditions, follow these precautions:

1. Slow down when entering slippery areas.

2. Maintain a high level of alertness, reading the trail and avoiding quick, sharp turns, which can cause skids.

3. Correct a skid by turning the steering wheel in the direction of the skid.

4. Drive with 4-wheel drive engaged to assist in controlling the vehicle.

⚠ WARNING

FAILURE TO EXERCISE CARE WHEN OPERATING ON SLIPPERY SURFACES CAN RESULT IN LOSS OF TIRE TRACTION AND CAUSE LOSS OF CONTROL, ACCIDENT, AND SERIOUS INJURY OR DEATH.

NEVER APPLY THE BRAKES DURING A SKID.

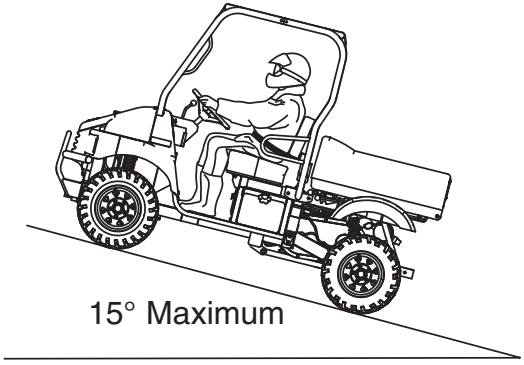
DO NOT OPERATE ON EXCESSIVELY SLIPPERY SURFACES.

ALWAYS REDUCE SPEED AND USE ADDITIONAL CAUTION WHEN OPERATING ON SLIPPERY SURFACES.

Driving Uphill

Whenever traveling uphill, follow these precautions:

1. Always travel straight uphill.
2. Avoid steep hills (15° maximum).
3. Keep both feet on the floor.
4. Proceed at a steady rate of speed and throttle opening.



⚠ WARNING

CLIMBING HILLS IMPROPERLY CAN CAUSE LOSS OF CONTROL OR VEHICLE OVERTURN. ALWAYS CHECK THE TERRAIN CAREFULLY BEFORE CLIMBING A HILL.

BRAKING AND HANDLING ARE GREATLY AFFECTED WHEN OPERATING IN HILLY TERRAIN. IMPROPER PROCEDURE COULD CAUSE LOSS OF CONTROL OR OVERTURN AND RESULT IN SERIOUS INJURY OR DEATH.

AVOID CLIMBING STEEP HILLS (15° MAXIMUM)

USE EXTREME CAUTION WHEN OPERATING ON HILLS, AND FOLLOW PROPER OPERATING PROCEDURES OUTLINED IN THE OPERATOR'S MANUAL

NEVER CLIMB HILLS WITH EXCESSIVELY SLIPPERY OR LOOSE SURFACES.

NEVER ACCELERATE SUDDENLY.

NEVER GO OVER THE CREST OF A HILL AT HIGH SPEED. AN OBSTACLE, A SHARP DROP, OR ANOTHER VEHICLE OR PERSON COULD BE ON THE OTHER SIDE OF THE HILL.

Sidehilling

⚠ WARNING

CROSSING DOWNHILL OR TURNING ON HILLS CAN RESULT IN LOSS OF CONTROL OR VEHICLE OVERTURN, RESULTING IN SEVERE INJURY OR DEATH. AVOID CROSSING THE SIDE OF A HILL WHEN POSSIBLE. WHEN UNAVOIDABLE, EXERCISE EXTREME CAUTION. AVOID OPERATING ON STEEP HILLS (15° MAXIMUM)

Driving Downhill

Whenever descending a hill, follow these precautions:

1. Proceed directly downhill.
2. Slow down.
3. Apply the brakes *slightly* to aid in slowing.

⚠ WARNING

TRAVELING DOWNHILL IMPROPERLY COULD CAUSE LOSS OF CONTROL OR VEHICLE OVERTURN. ALWAYS CHECK TERRAIN CAREFULLY BEFORE DESCENDING A HILL

NEVER DESCEND A HILL AT HIGH SPEED. EXCESSIVE SPEED MAY RESULT IN LOSS OF VEHICLE CONTROL AND LEAD TO SERIOUS INJURY OR DEATH. ALWAYS OPERATE SLOWLY WHEN TRAVELING DOWNHILL

AVOID DESCENDING A HILL AT AN ANGLE, WHICH WOULD CAUSE THE VEHICLE TO LEAN SHARPLY TO ONE SIDE. TRAVEL STRAIGHT DOWNHILL WHEN POSSIBLE.

Driving Through Water

⚠ WARNING

THE LARGE TIRES ON YOUR UTILITY VEHICLE MAY CAUSE THE VEHICLE TO FLOAT IN DEEP OR FAST-FLOWING WATER, WHICH COULD RESULT IN LOSS OF CONTROL AND LEAD TO SERIOUS INJURY OR DEATH. NEVER CROSS DEEP OR FAST FLOWING WATER WITH YOUR BUSH HOG UTILITY VEHICLE.

Your Bush Hog utility vehicle can operate through water up to a maximum recommended depth equal to the floorboards. Follow these procedures when operating through water:

1. Always determine water depths and current before entering.

2. Choose a crossing where both banks have gradual inclines.

3. Proceed slowly, avoiding rocks and obstacles.

4. After leaving water, always dry the brakes by applying light pressure to the lever repeatedly until braking action is normal.

NOTE: After running your vehicle in water, it's critical that you perform the services outlined in the Maintenance section on page 47. Give special attention to engine oil, transmission oil, front and rear gearcases, and all grease fittings.

⚠ CAUTION

IMMERSION CAN RESULT IN MAJOR DAMAGE IF THE VEHICLE ISN'T SERVICED CORRECTLY AND PROMPTLY. AFTER IMMERSION, ALWAYS TAKE THE VEHICLE FOR YOUR DEALER TO SERVICE. *DO NOT START THE ENGINE!*

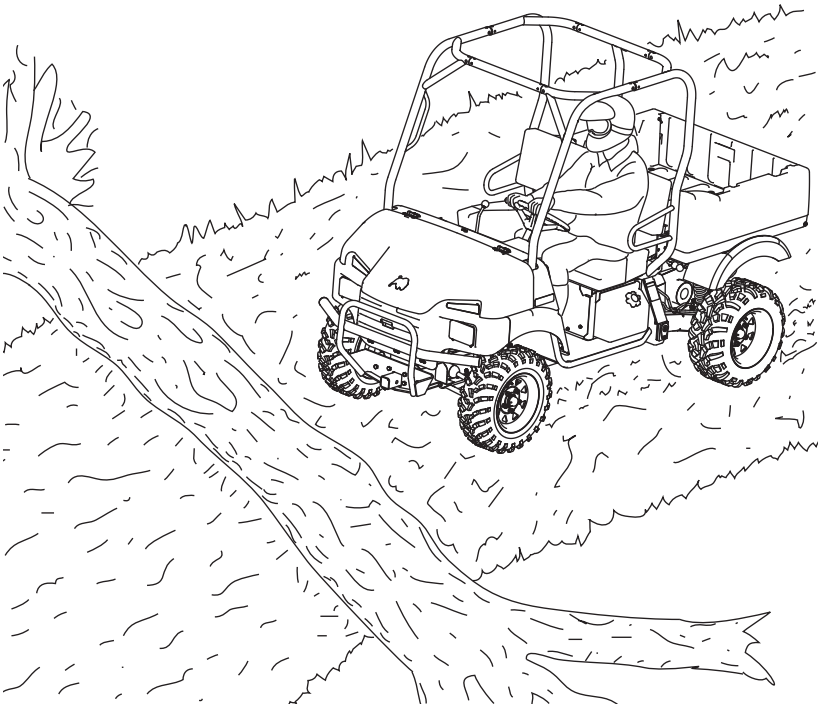
IF IT IS NOT POSSIBLE TO TAKE THE VEHICLE TO YOUR DEALER BEFORE STARTING THE ENGINE, PERFORM THE SERVICE OUTLINES IN PAGE 56, AND TAKE THE VEHICLE TO YOUR DEALER AT THE FIRST OPPORTUNITY.

Driving Over Obstacles

Be alert! Look ahead and learn to read the terrain you're traveling on. Watch for hazards such as logs, rocks and low hanging branches.

⚠ WARNING

SEVERE INJURY OR DEATH CAN RESULT IF YOUR VEHICLE SUDDENLY COMES IN CONTACT WITH A HIDDEN OBSTACLE. NOT ALL OBSTACLES ARE IMMEDIATELY VISIBLE. REDUCE SPEED AND TRAVEL WITH CAUTION IN UNFAMILIAR TERRAIN



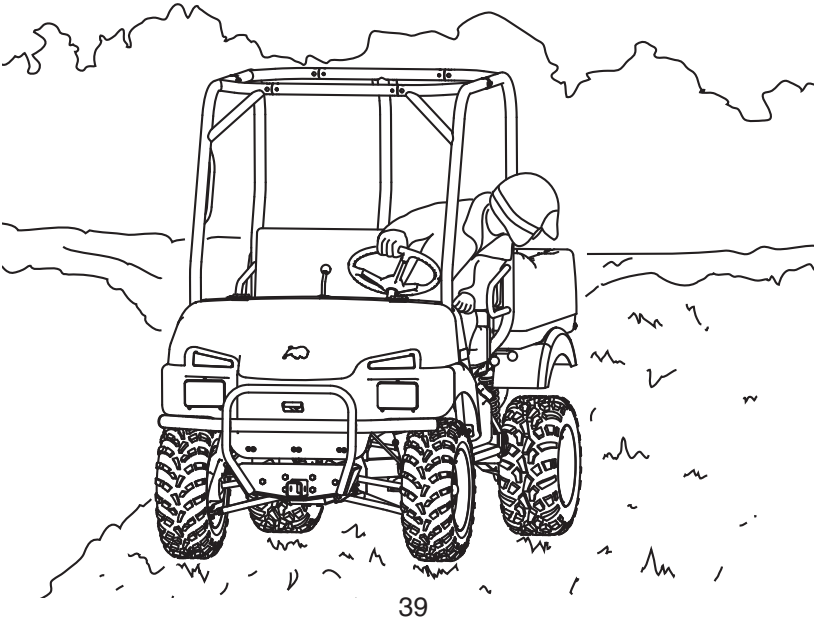
Driving In Reverse

Follow these guidelines when operating in reverse:

1. Back slowly.
2. Apply the brakes lightly for stopping.
3. Avoid turning at sharp angles.
4. Always avoid backing downhill.
5. Never open the throttle suddenly while backing.
6. Always inspect left and right fields of vision before backing.

⚠ WARNING

FAILURE TO USE CAUTION WHEN OPERATING IN REVERSE CAN RESULT IN SERIOUS INJURY OR DEATH. BEFORE SHIFTING INTO REVERSE, ALWAYS CHECK FOR OBSTACLES OR PEOPLE BEHIND THE VEHICLE AND FOLLOW THE REVERSE OPERATION PROCEDURES OUTLINED IN THIS MANUAL. ALWAYS BACK SLOWLY.



Parking On An Incline

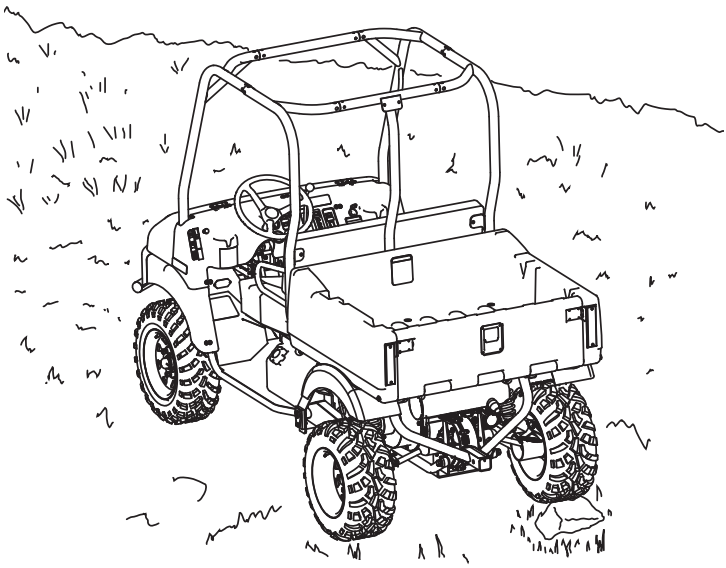
Avoid parking on an incline if possible. If it is unavoidable, follow these precautions:

1. Place the transmission in low gear to help prevent rolling.
2. Set the parking brake.
3. Block the rear wheels on the downhill side.

⚠ WARNING

A ROLLING VEHICLE CAN CAUSE PROPERTY DAMAGE AND SERIOUS INJURY. ALWAYS APPLY THE PARKING BRAKE AFTER STOPPING THE ENGINE. ALWAYS BLOCK THE DOWNHILL SIDE OF THE WHEELS IF LEAVING THE VEHICLE ON A HILL, OR PARK THE VEHICLE IN A SIDEHILL POSITION INSTEAD.

OPERATING THE VEHICLE WHILE THE PARKING BRAKE IS ENGAGED COULD CAUSE LOSS OF CONTROL AND RESULT IN SERIOUS INJURY OR DEATH. ALWAYS DISENGAGE THE PARKING BRAKE BEFORE OPERATING THE VEHICLE.



Hauling Cargo

⚠ WARNING

HAULING CARGO IMPROPERLY CAN ALTER VEHICLE HANDLING AND MAY CAUSE LOSS OF CONTROL OR BRAKE INSTABILITY, WHICH CAN RESULT IN SERIOUS INJURY OR DEATH. ALWAYS FOLLOW THESE PRECAUTIONS WHEN HAULING CARGO:

ALWAYS LOAD THE CARGO BOX WITH THE LOAD AS FAR FORWARD AS POSSIBLE.

ALWAYS OPERATE THE VEHICLE WITH EXTREME CARE WHEN HAULING OR TOWING LOADS.

SLOW DOWN AND DRIVE IN LOW GEAR.

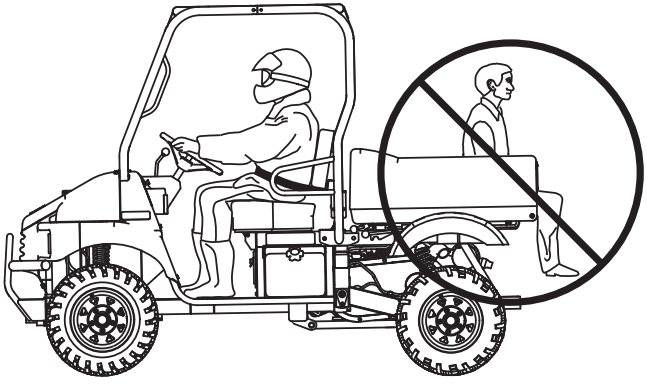
Bush Hog utility vehicles have been designed to carry or tow specific capacities. Always read and understand the load distribution warnings listed on the warning decals.Never exceed the following capacities.

Model	Max. Capacity	Cargo Box	Towing Capacity
Trail Hunter	1,250 lbs.	750 lbs.	1,500 lbs.
Trail Hand	1,500 lbs.	1,000 lbs.	1,500 lbs.

⚠ WARNING

DRIVING WITH PASSENGERS IN THE CARGO BOX CAN RESULT IN SEVERE INJURY OR DEATH.

NEVER ALLOW PASSENGERS TO RIDE IN THE CARGO BOX. PASSENGERS MUST ALWAYS RIDE IN THE CAB WITH SEAT BELTS FASTENED SECURELY.



Emptying The Cargo Box (Electric Lift Models)

⚠ WARNING

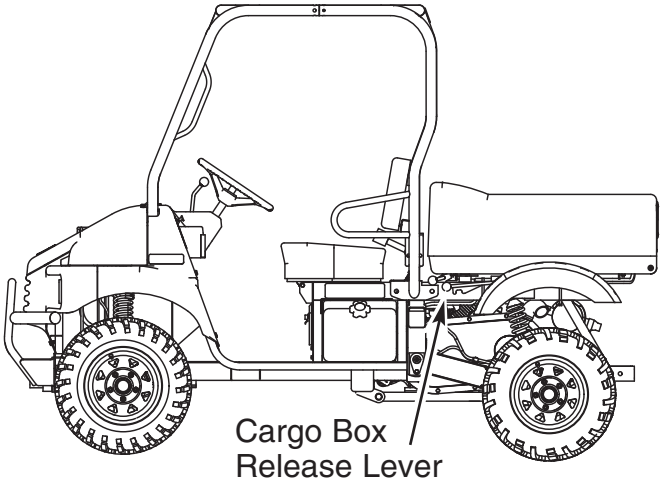
OPERTATING THE VEHICLE WHILE THE CARGO BOX IS RAISED COULD RESULT IN SEVERE INJURY. THE BOX COULD CLOSE UNEXPECTEDLY AND CAUSE INJURY TO THE DRIVER OR PASSENGER. NEVER OPERATE THIS VEHICLE WITH THE CARGO BOX IN THE RAISED POSITION.

1. Select a level site to empty the cargo box. Do not attempt to unload the vehicle while parked on an incline.
2. Set the parking brake.
3. Dismount the vehicle.
4. Release the tailgate latch.
5. Operate the bed lift switch to raise the box.
6. Using the switch, lower the cargo box completely before moving the vehicle.

⚠ WARNING

ON MANUAL LIFT MODELS:
IF THE WEIGHT DISTRIBUTION ON THE BOX IS LOCATED TOWARD THE REAR OF THE BOX WHEN THE RELEASE LEVER IS PULLED UPWARD, THE BOX MAY DUMP UNEXPECTEDLY AND CAUSE SERIOUS INJURY TO THE OPERATOR OR BYSTANDERS.

NEVER OPERATE THE DUMP LEVER WITHOUT ENSURING THAT THE BOX IS EMPTY.



Towing Loads

⚠ WARNING

TOWING IMPROPERLY CAN ALTER VEHICLE HANDLING AND MAY CAUSE LOSS OF CONTROL OR BRAKE INSTABILITY, WHICH CAN RESULT IN SERIOUS INJURY OR DEATH. ALWAYS FOLLOW THESE PRECAUTIONS WHEN TOWING:

NEVER LOAD MORE THAN 150 LBS. (68.1 kg) TONGUE WEIGHT ON THE TOWING BRACKET.

DO NOT OPERATE VEHICLE FASTER THAN 10 MPH (16 km/h) WHEN TOWING. TOWING A TRAILER INCREASES BRAKING DISTANCE.

DO NOT TOW MORE THAN THE RECOMMENDED 1,500 LB. WEIGHT FOR THE VEHICLE.

ATTACH A TRAILER TO THE HITCH BRACKET ONLY. DO NOT ATTACH A TRAILER TO ANY OTHER LOCATION OR YOU MAY LOSE CONTROL OF THE VEHICLE.

NEVER TOW A TRAILER ON A GRADE STEEPER THAN 15°.

Belt Life

Use low forward gear when hauling or towing heavy cargo to extend belt life.

Parking The Bush Hog Utility Vehicle

⚠ WARNING

A ROLLING VEHICLE CAN CAUSE PROPERTY DAMAGE AND SERIOUS INJURY. ALWAYS APPLY THE PARKING BRAKE AFTER STOPPING THE ENGINE.

1. Stop the vehicle on a level surface.

2. When the engine has stopped, apply the parking brake.

3. Remove the ignition switch key to prevent unauthorized use.

⚠ WARNING

GASOLINE IS EXTREMELY FLAMMABLE AND CAN BE EXPLOSIVE UNDER CERTAIN CONDITIONS. WHEN PARKING INSIDE A GARAGE OR OTHER STRUCTURE, BE SURE THAT THE STRUCTURE IS WELL VENTILATED AND THAT THE VEHICLE IS NOT CLOSE TO ANY SOURCE OF FLAME OR SPARKS, INCLUDING ANY APPLIANCE WITH PILOT LIGHTS.

4-Wheel Drive

Your Bush Hog Utility Vehicle is equipped with an exclusive 4-wheel drive system that can be activated by a switch on the dash board. When the switch is off, the vehicle is in two-wheel drive at all times. When the switch is in 4-wheel drive, the front wheels will automatically engage anytime the rear wheels begin to lose traction. When the rear wheels regain traction, the front wheels will automatically disengage.

The 4-wheel drive switch light indicates whether the vehicle is in 4-wheel drive. There is no limit to the length of time the vehicle may remain in 4-wheel drive.

The 4-wheel drive switch may be turned on or off while the vehicle is moving. If the switch is turned off while the front hubs are driving, they will not release until the rear wheels regain traction.

⚠ CAUTION

SWITCHING TO 4-WHEEL DRIVE WHILE THE REAR WHEELS ARE SPINNING MAY CAUSE SEVERE DRIVE SHAFT AND CLUTCH DAMAGE. ALWAYS SWITCH TO 4-WHEEL DRIVE WHILE THE REAR WHEELS HAVE TRACTION OR ARE AT REST.

Disengaging 4-Wheel Drive

Under certain conditions, it may be possible for one or both hubs to remain engaged unnecessarily. This condition causes increased steering effort and some vehicle speed restriction.

Take the following steps to disengage the 4-wheel drive system:

1. Stop the vehicle.

2. Shift to reverse and back up a minimum of 10 feet.

3. Stop completely.

4. Shift into forward and drive.

If the hubs remain engaged after following these instructions, return the vehicle to your dealer for service.

⚠ WARNING

OPERATING WITH ONLY ONE FRONT HUB ENGAGED COULD RESULT IN LOSS OF CONTROL, ACCIDENT, AND SEVERE INJURY OR DEATH.

WHEN HUB ENGAGEMENT SYMPTOMS ARE PRESENT, USE THE DISENGAGING PROCEDURE BEFORE PROCEEDING.

NOISE EMISSION CONTROL SYSTEM

TAMPERING WITH NOISE CONTROL SYSTEEM IS PROHIBITED!
U.S. Federal law prohibits the following acts or the causing thereof:

1. The removal or rendering inoperative by any person other than for purposes of maintenance, repair, or replacement of any device or element of design incorporated into any new vehicle for the purpose of noise control prior to its sale or delivery to the ultimate purchaser or while it is in use or

2. The use of the vehicle after such device or element of design has been removed or rendered inoperative by any person.

“AMONG THOSE ACTS PRESUMED TO CONSTITUTE TAMPERING ARE THE ACTS LISTED BELOW,”

1. Removal or alteration or the puncturing of the muffler or any engine component which conducts removal of engine exhaust gases.

2. Removal or alteration or the puncturing of any part of the engine air induction system.

3. Replacement of any vehicle parts with parts not in compliance with federal regulations.

4. Lack of proper maintenance.

⚠ CAUTON

EXHAUST SYSTEM COMPONENTS ARE VERY HOT DURING AND AFTER USE OF THE VEHICLE. HOT COMPONENTS CAN CAUSE SERIOUS BURNS AND CAN CAUSE A FIRE.

DO NOT TOUCH HOT EXHAUST SYSTEM COMPONENTS.

USE CAUTION WHEN TRAVELING THROUGH TALL GRASS, ESPECIALLY DRY GRASS.

USFS Approved Spark Arrestor

The muffler on this vehicle was tested and approved in accordance with the USFS Forest Service Stanedard 5100-1A.

SECTION III
MAINTENANCE AND LUBRICATION

Periodic Maintenance Schedule

Careful periodic maintenance will help keep your vehicle in the safest, most reliable condition. Inspection, adjustment and lubrication intervals of important components are explained in the following schedule.

Maintenance intervals are based upon average operating conditions. Vehicles subjected to severe use, such as operation in wet or dusty areas, should be inspected and serviced more frequently. If you're not familiar with safe service and adjustment procedures, have a qualified dealer perform these operations.

Inspect, clean, lubricate, adjust or replace parts as necessary. When inspection reveals the need for replacement parts, always use genuine Bush Hog parts available from you Bush Hog dealer.

Maintenance Chart Key

▲ Perform these operations more often under severe use, such as in dirty or wet conditions, to purge water or dirt contamination from grease fillings and othe critical components.

★ Emission Control System Service - NOTE: Some models may have an additional California-only emissions warranty.

■ Dealer service item.

Periodic Maintenance Schedule

⚠ WARNING

IMPROPERLY PERFORMIMNG THE PROCEDURES MARKED WITH A ■ COULD RESULT IN A COMPONENT FAILURE AND LEAD TO SERIOUS INJURY OR DEATH. HAVE AN AUTHORIZED BUSH HOG DEALER PERFORM THESE SERVICES.

Item	Frequency	Remarks
Brake System	Pre-operation	Inspect
Tires	Pre-operation	Inspect
Wheels	Pre-operation	Inspect
Frame nuts, bolts, fasteners	Pre-operation	Inspect
Parking Brake	Pre-operation	Check lever adjustment daily; adjust
Throttle Cable	Pre-operation	Inspect
Steering	Pre-operation	Inspect
Coolant/Level	Daily	Replace every two years
Headlamp	Daily	Inspect daily; apply dielectric grease to donnector when replaced
Taillamp	Daily	Inpect daily; apply dielectric grease to socket when replaced
▲ Air Filter- Main ★ Element	Weekly	Inspect; replace if necessary
▲ Transmission Oil	25 hrs.	Check level; change oil annually
Battery	25 hrs.	Check terminals; clean; check fluid level
■ Brake pad wear	25 hrs.	Inspect periodically
▲ Engine breather ★ filter	25 hrs.	Inspect; replace annually and as needed
▲ General Lubrication	25 hrs.	Lubricate all fittings, pivots, cables

	Item	Frequency	Remarks
	Engine Cylinder Head/Cylinderr Base Fasteners	25 hrs.	Re-torque required at first service only
▲	Engine Oil-Level	25 hrs.	Check level daily; break-in service at 25 hrs.
▲ ★	Engine Oil - Change	100 hrs.	Change oil at 100 hours; more often in cold weather use
▲ ★	Oil Filter	100 hrs.	Replace with oil change
★	Engine breather hose	100 hrs.	Inspect
	Carburetor Float Bowl	50 hrs.	Drain bowl periodically and prior to storage
■	Throttle Cable	50 hrs.	Inspect; adjust, lubricate, replace if necessary
★	Choke (Enricher) Cable	50 hrs.	Inspect;adjust, replace if necessary
	Shift Linkage	50 hrs.	Inspect; adjust
■	Drive Belt	50 hrs.	Inspect; adjust, replace if necessary
■	Steering	50 hrs.	Inspect; lubricate
▲	Front Suspension	50 hrs.	Inspect; lubricate, tighten
			Fasteners
▲	Rear Suspension	50 hrs.	Inspect; tighten fsteners
	Engine Mounts	300 hrs.	Inspect
■	Valve Clearance	300 hrs.	Inspect; adjust
★			
★	Spark Plug	100 hrs.	Inspect; replace if necessary
■ ★	Ignition Timing	100 hrs.	Inspect and adjust as needed
■	Front Hub Bearings	100 hrs	Check at 100 hrs. and replace as needed

	Item	Frequency	Remarks
■ ★	Fuel System	100 hrs.	Check for leaks at fuel cap lines, fuel valve, filter, pump and carburetor.Replace lines every two years.
	Fuel Filter	100 hrs.	Replace annually
	Spark Arrestor	100 hrs.	Clean out
▲	Front Gearcase Oil	100 hrs.	Check monthly; change annually
■	Clutches (drive and driven)	100 hrs.	Inspect; clean
■	Brake Fluid	200 hrs.	Change every two years
■	Front Wheel Bearings	300 hrs.	Inspect; replace if necessary
★	Idle Speed	As required	Adjust
	Engine Side Cover	As required	Drain moisture after driving in water.
■	Toe Adjustment	As required	Periodic inspection, adjust when parts are replaced

MAINTENANCE AND LUBRICATION

Lubrication Recommendations

NOTE: Hours are based on 10 mph average. If service is due at 20 hours, the equivalent odometer reading would be 200 miles. Perform all services at whichever reading is reached first.

Lubrication Chart

Item	Lube	Method	Frequency
Engine Oil	SAE 10W-30, API SJ for gereral use	Add to proper level on dipstick	Check level daily
Brake Fluid	DOT 3 or 4	Maintain level between fill lines	As required; change every 200 hrs.
Transaxle Oil	SAE 80W-90 w/LSD additive	Refill to middle of sight window	Check monthly; change every 100 hrs.
Front Differential	Mobil 424	Refill to check plug	Every 100 hrs.
Right Angle Drive	SAE 80W-90 w/LSD additive	Refill to middle of sight window	Every 100 hrs.
Lube Fittings: Top of Front Struts, Swing Arm Pivots, Pillow Block on Driveshaft	Lithium Based Grease	Grease with grease gun	Every 25 hrs.

⚠ CAUTON

MIXING BRANDS OR USING A NON-RECOMMENDED OIL MAY CAUSE SERIOUS ENGINE DAMAGE

⚠ WARNING

VEHICLE OPERATION WITH INSUFFICIENT, DETERIORATED, OR CONTAMINATED ENGINE OIL WILL CAUSE ACCELERATED WEAR AND MAY RESULT IN ENGINE SEIZURE, ACCIDENT, AND INJURY. ALWAYS PERFORM THE MAINTENANCE PROCEDURES AS OUTLINED IN THE PERIODIC MAINTENANCE SCHEDULE.

Engine Oil

Maintain the engine oil at the proper level to ensure a properly functioning engine, and change the oil and oil filter every 100 hours or every six months, whichever comes first. Dirt and metal particles collect in the oil, and oil loses its lubricative quality if used too long.

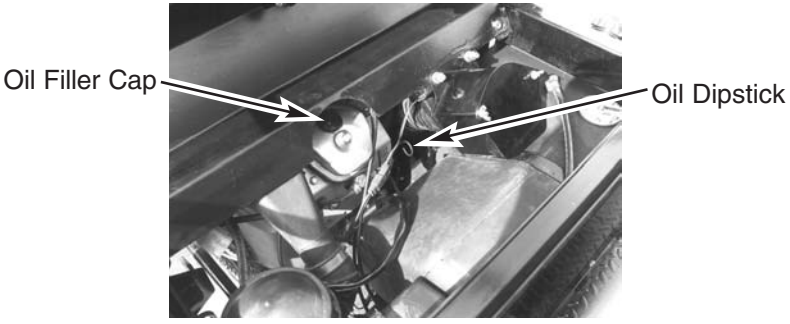
Suggested break-in oil change is at 25 hours, or one month, whichever comes first. Severe use operation requires more frequent service. Severe use includes continuous duty in dusty or wet conditions, and cold weather operation. NOTE: Severe use/cold weather operation is when all operating is at below 10°F and/or when operating between 10°F and 30°F if most trips are slow speed and less than five miles. Always change the oil filter when changing oil.

Oil Check

The engine oil can be checked and/or refilled by folding the bottom seat cushion up and forward exposing the engine.

1. Position the vehicle on a level surface.
2. Start the engine and let it idle for 20 - 30 seconds.
3. Stop the engine and fold the seat forward.
4. Remove the dipstick and wipe it clean with a clean cloth.
5. Replace the dipstick completely into the engine.
6. Remove the dipstick and check to see that the oil level is between the full and add marks. Add oil if necessary. Do not overfill.

NOTE: A rising oil level between checks in cool weather driving can indicate moisture collecting in the crankcase. If the oil level is above the full mark, change the oil.



Engine Oil and Filter Change

⚠ CAUTION

HOT OIL CAN CAUSE SERIOUS BURNS. DO NOT ALLOW OIL TO COME INTO CONTACT WITH SKIN.

1. Run the engine two or three minutes until warm. Stop the engine.
2. Clean the area around the drain plug at the bottom of the crankcase.
3. Place a drain pan beneath the engine and remove the drain plug. Allow the oil to drain completely.
4. Clean drain hole and replace the drain plug. Torque to 14 ft. lbs.
5. Remove the oil filter and clean the sealing surface area.
6. Lubricate the new filter 0-ring with clean engine oil.
7. Install the new filter and turn by hand until filter gasket contacts the sealing surface, then turn an additional 1/2 turn.
8. Remove the dipstick and fill the engine with approximately 1-1/2 quarts of SAE 10W-30, API SJ motor oil. Replace the dipstick.
9. Start the engine and check for leaks at the drain plug and oil filter.
10. Stop the engine and check the oil level on the dipstick.
11. Dispose of used oil and filter properly.

Transaxle

The transaxle oil should be changed every 100 hours.

1. Park the vehicle on a level surface.
2. Remove the drain plug from the transaxle and let oil drain into a drain pan. Dispose of used oil properly.
3. Clean drain hole and replace the drain plug.
4. Refill transaxle with Mobilube HD LS 80W-90 (or equivalent) to the middle of sight window. If the transaxle does not have a sight window, refill to top of check plug.

Front Differential

The front differential oil should be changed every 100 hours If the vehicle is used in wet conditions, the oil should be checked more frequently. If the oil has a milky appearance, it should be changed as soon as possible. Failure to properly maintain this area can result in premature wear or possible failure of the front differential components.

Oil Check

1. With the vehicle on a level surface, remove the fill plug and check the lubricant level. Oil should be filled until it overflows from the fill plug.

2. Replace the fill plug and tighten.

Oil Change

1. Support the vehicle securely with a jack stand.

2. Remove the front tire on the driver's side.

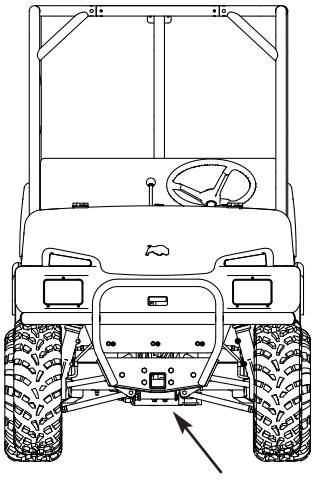
3. Remove the fill plug.

4. Remove the drain plug located on the bottom right-hand side and drain the oil into a drain pan. Discard the used oil properly.

5. Clean and reinstall the drain plug.

6. Add Mobil 424 oil to 3/4" below the threads of the fill plug hole.

7. Reinstall the fill plug and tighten. Check for leaks.



Front Differential

Right Angle Drive

The right angle drive oil should be changed every 100 hours.

1. With the vehicle on a level surface remove the fill plug and drain plug and drain oil into a drain pan. Discard the used oil properly.

2. Refill the drive box with SAE 80W-90 w/LSD additive, to the middle of the sight window.

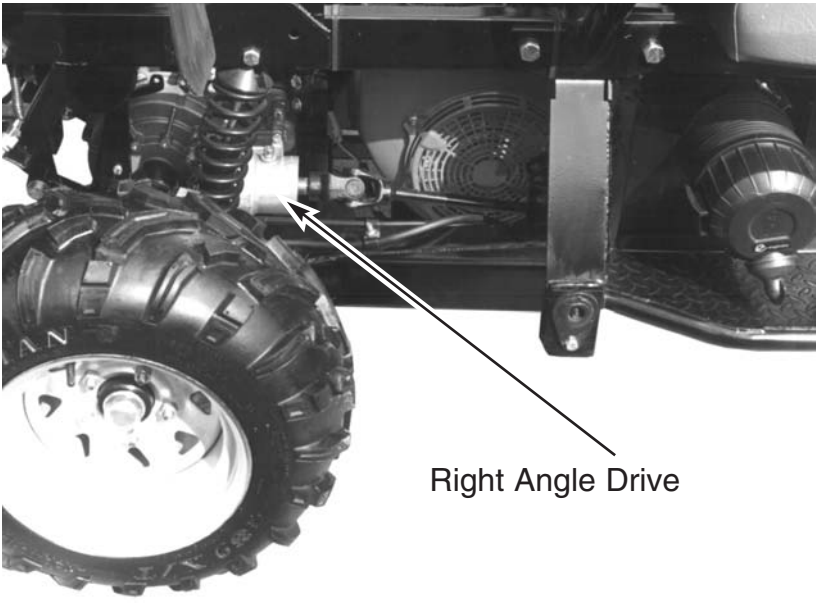
Oil Change

1. Remove the combination breather/fill plug from the top of the case.

2. Remove the drain plug from the bottom of the case and drain the oil into a pan. Discard the used oil properly.

3. Clean and replace the drain plug and fill the right angle drive with Mobilube HD LS 80W-90 (or equivalent) - Refill to the center of the sight window.

4. Replace the breather/fill plug and tighten. Check for leaks.



Constantly Variable Transmission (CVT)

⚠ WARNING

FAILURE TO COMPLY WITH THE INSTRUCTIONS IN THIS WARNING CAN RESULT IN SEVERE INJURY OR DEATH.

Do not modify any component of the CVT system. Doing so may reduce its strength so that a failure may occur at a high speed. The CVT system has been precision balanced. Any modification will cause the system to be out of balance, creating vibration and additional loads on components.

The CVT system rotates at high speeds, creating large amounts of force on clutch components. Extensive engineering and testing has been conducted to ensure the safety of this product. However, as the owner, you have the following responsibilities to make sure this system remains safe:

Always follow all recommended maintenance procedures. See your dealer if required.

This CVT system is intended for use on the Bush Hog utility vehicle. Do not install it on any other product.

Always make sure the CVT housing is securely in place during operation.

CVT Drying

There may be some instances when water is accidently ingested into the CVT system Use the following instructions to dry it out before operating.

1. Shift the transmission into neutral and apply full throttle for no longer than 10 seconds and repeat as necessary. This will expel the moisture and air dry the belt and clutches.

2. Allow the engine RPM to settle to idle speed, then shift the transmission to the lowest available range.

3. Test for belt slippage. If the belt slips, repeat the process.

4. Take the vehicle to your dealer for service as soon as possible.

Vehicle Immersion

⚠ CAUTION

IF YOUR VEHICLE BECOMES IMMERSED, MAJOR ENGINE DAMAGE CAN RESULT IF THE VEHICLE IS NOT THOROUGHLY INSPECTED. TAKE THE VEHICLE TO YOUR DEALER BEFORE STARTING THE ENGINE.

If it is impossible to take your vehicle to a dealer before starting it, follow the steps outlined below.

Honda Engines

1. Move the vehicle to dry ground, or at least to a water level below the floor.
2. Disconnect the fuel pump wires.
3. Remove the spark plugs.
4. Loosen the carburetor drain screw by turning the screw counterclockwise to allow fuel to drain from the fuel bowl . This screw is accessible with a long handled screwdriver from above, and behind the engine.
5. Turn the engine over several times with the electric starter.
6. Dry the spark plugs and reinstall, or install new spark plugs.
7. Tighten the carburetor drain screw.
8. Connect the fuel pump wires.
9. Attempt to start the engine. If necessary, repeat the drying procedure.

Briggs & Stratton Engines

The procedure for the Briggs & Stratton engine would be the same as for the Honda except that there is no drain feature on the carburetor fuel bowl. The carburetor should be removed and thoroughly cleaned inside and out.

NOTE: Water damage to electrical components may necessitate replacement of that component.

Engine Air Filter

We recommend that the air filter be cleaned every 25 hours and replaced once a year.

1. The air filter is accessible from the right side of the vehicle, below the passenger seat. Loosen both fastening clips and remove the housing cover. There is an outer and inner filter that may then be pulled out for service or replacement.

2. Inspect the filter housing and clean out any debris or moisture.

3. Replace the filter elements or install new ones.

NOTE: Service the air filter more frequently if the vehicle is operated in wet conditions or at high throttle openings for extended periods.

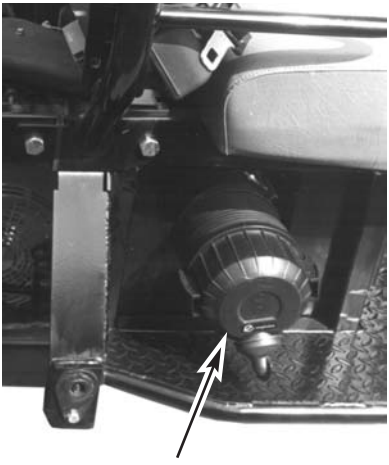
CVT Enclosure Air Filter

We recommend that the air filter be cleaned every 25 hours and replaced once a year

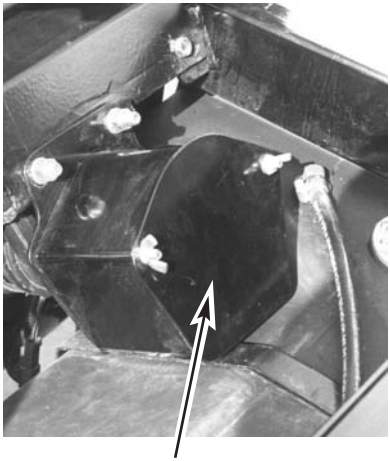
The CVT filter is accessible by folding the seat forward. The filter housing is located on the driver's side above the gas tank.

1. Remover the two wing nuts and remove the housing cover.

2. Remover the filter element, clean the inside of the housing and reinstall the filter or install a new one.



Engine Air Filter Housing



CVT Air Filter Housing

Fuel Filter

Your Bush Hog utility vehicle is equipped with an in-line fuel filter that should be replaced by your dealer after every 100 hours of operation.Do not attempt to clean the fuel filter.

Spark Plugs

The spark plugs should be changed every 100 hours. The spark plugs are accessible from under the seat or under the cargo box. Always use the spark plugs recommended by the engine manufacturer and set the gap as specified.

⚠ WARNING

A HOT EXHAUST SYSTEM AND ENGINE CAN CAUSE SERIOUS BURNS. WEAR PROTECTIVE GLOVES WHEN REMOVING A SPARK PLUG FOR INSPECTION.

Spark plug condition is indicative of engine operation. The spark plug firing end condition should be read after the engine is warmed up and the vehicle is driven at higher speeds. Immediately check the spark plug for correct color.

1. Normal
The normal insulator tip is gray, tan, or light brown. There will be few combustion deposits. The electrodes are not burned or eroded. This indicates the proper type and heat range for the engine and service. NOTE: The tip should not be white. A white tip indicates overheating, caused by use of an improper spark plug or incorrect carburetion adjustments.

2. Wet Fouled
The wet fouled insulator tip is black. A damp oil film covers the firing end. There may be a carbon layer over the entire nose. Generally, the electrodes are not worn. General causes of fouling are excessive oil, use of non-recommended injection oil, improper use of the choke. or incorrect carburetion adjustments.

Spark Plug Removal and Replacement

1. Open the seat and/or the cargo box to access the engine compartment.
2. Remove the spark plug boot and using a socket wrench, remove the plug.
3. Reverse the procedure for spark plug installation. Torque to 14 ft. lbs. (19 Nm).

Spark Arrestor

⚠ WARNING

FAILURE TO HEED THE FOLLOWING WARNINGS WHILE SERVICING THE SPARK ARRESTOR COULD RESULT IN SERIOUS INJURY OR DEATH.

DO NOT PERFORM SERVICE ON THE SPARK ARRESTOR WHILE THE SYSTEM IS HOT. EXHAUST SYSTEM TEMPERATURES CAN REACH 1000° F. ALLOW COMPONENTS TO COOL SUFFICIENTLY BEFORE PROCEEDING.

REMOVE COMBUSTIBLE MATERIALS FROM THE AREA.

WEAR EYE PROTECTION.

DO NOT STAND BEHIND OR IN FRONT OF THE VEHICLE WHILE PURGING.

NEVER RUN THE ENGINE IN AN ENCLOSED AREA. EXHAUST CONTAINS POISONOUS CARBON MONOXIDE GAS THAT CAN CAUSE LOSS OF CONSCIOUSNESS OR DEATH IN A VERY SHORT TIME.

NEVER GO UNDER THE VEHICLE WHILE IT IS INCLINED.

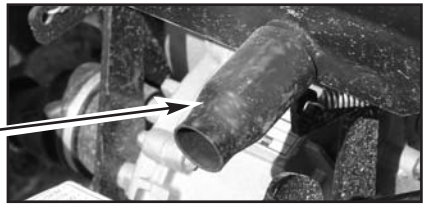
Use the following procedure to periodically purge accumulated carbon from the exhaust system.

1. Loosen the set screw and remove the spark arrestor from the muffler. Tap the arrestor on a hard surface to loosen carbon deposits and clean the inside of the tubing.

2. Place the engine in neutral and start the engine. Purge the accumulated carbon from the system by momentarily revving the engine several times. Rap the exhaust system and repeat the procedure several times to expel additional carbon.

3. Stop the engine and allow the exhaust system to cool.

4. Reinstall the spark arrestor.



Spark Arrestor

Throttle System

⚠ WARNING

FAILURE TO CHECK OR MAINTAIN PROPER OPERATION OF THE THROTTLE SYSTEM CAN RESULT IN AN ACCIDENT AND LEAD TO SERIOUS INJURY OR DEATH IF THE THROTTLE STICKS DURING OPERATION.

NEVER START OR OPERATE THIS VEHICLE IF IT HAS A STICKING OR IMPROPERLY OPERATING THROTTLE PEDAL.

IMMEDIATELY CONTACT YOUR DEALER FOR SERVICE IF THROTTLE PROBLEMS ARISE.

ALWAYS CHECK THE PEDAL FOR FREE MOVEMENT AND RETURN BEFORE STARTING THE ENGINE AND OCCASIONALLY DURING OPERATION.

Throttle Freeplay

If the throttle pedal has excessive play due to cable stretch or cable misadjustment, it will cause a delay in throttle response, especially at low engine speed. The throttle may also not open fully. If the throttle pedal has no freeplay, the throttle may be hard to control, and idle may be erratic.

Throttle Freeplay Inspection

1. Apply parking brake.
2. Shift the gear lever into neutral.
3. Start the engine and warm it up thoroughly.
4. Measure the distance the throttle pedal moves before the engine begins to pick up speed. Freeplay should be from 1/16” to 1/8”.

Note: The throttle system is not intended to be adjusted by the owner. If problems occur, take the vehicle to your dealer for adjustments.

Brake Inspection

The front and rear brakes are hydraulic disc type brakes and are activated by the brake pedal.

Routine inspections are recommended to keep the brake system in good operating condition. Inspect the level of the brake fluid before each operation.

Change the brake fluid at the intervals outlined in the Maintenance Schedule beginning on page 49. The brake fluid should also be changed if it becomes contaminated, if the fluid level is below the minimum, or if the type and brand of the fluid in the reservoir are unknown.

Inspection Procedure

1. Position the vehicle on level ground.

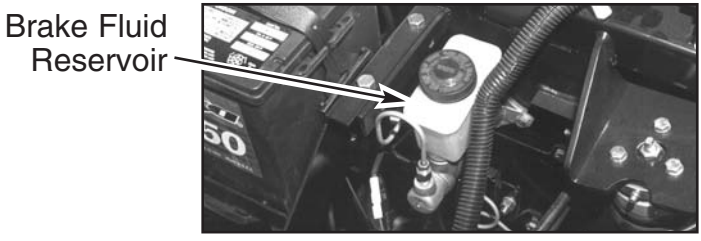
2. Inspect the brake fluid by looking at the reservoir under the hood. The level should be between the upper (MAX) and lower (MIN) level lines.

3. If the fluid level is lower than the lower level line, add brake fluid to the upper (MAX) line.

4. Apply the brake forcefully for a few seconds and check for fluid leakage around the fittings.

⚠ WARNING

AFTER OPENING A BOTTLE OF BRAKE FLUID, ALWAYS DISCARD ANY UNUSED PORTION. NEVER STORE OR USE A PARTIAL BOTTLE. BRAKE FLUID IS HYGROSCOPIC, MEANING IT RAPIDLY ABSORBS MOISTURE FROM THE AIR. THE MOISTURE CAUSES THE BOILING TEMPERATURE OF THE BRAKE FLUID TO DROP, WHICH CAN LEAD TO EARLY BRAKE FADE AND THE POSSIBILITY OF ACCIDENT OR SEVERE INJURY.



Brake Inspection

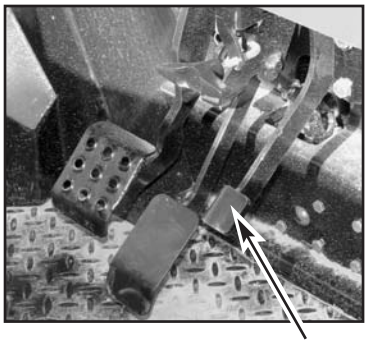
5. Check the brake system for fluid leaks.
6. Check the brake pedal for excessive travel or a spongy feel.
7. Check the friction pads for wear, damage and looseness.
8. Inspect the brake disc spline and pad wear surface for excessive wear.
9. Change pads when worn to 3/64" (.1 cm), about the thickness of a dime.

Parking Brake Adjustment

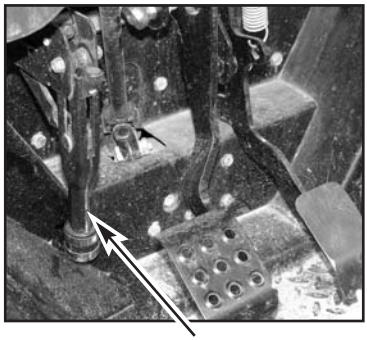
1. Engage the parking brake by stepping on the foot lever (Trail Hand) or pulling up the hand lever (Trail Hunter). the vehicle should not roll while parked. If the vehicle moves, adjustment is needed.

2. (Trail Hand) On the underside of the vehicle the threaded end of the parking brake cable passes through an equalizer bracket. Hex nuts on each side of the equalizer position the brake cable. Loosen the nut on the front side of the equalizer and then tighten the rear side nut to increase pressure on the brake system. Test the brake system and adjust again, if needed. When adjustment is satisfactory, tighten both nuts securely against the equalizer bracket.

   (Trail Hunter) The hand lever is equipped with a rotating knob to adjust the engagement of the parking brake. Loosen the set screw on the side of the knob and turn the knob clockwise to increase pressure on the brake system. Test the brake system and adjust again, if needed. When adjustment is satisfactory, tighten the set screw securely in the adjustment knob.



Trail Hand Parking Brake



Trail Hunter Parking Brake

Steering Wheel Inspection

Check the steering wheel for freeplay and smooth operation as outlined in the Maintenance Schedule.

1. Park the vehicle on level ground.

2. Lightly turn the steering wheel left and right.

3. There should be 0.8 - 1.0 in. (20 25 mm) of freeplay.

4. If there is excessive freeplay or strange noises, or the steering feels rough or “catchy”, have the steering system inspected by an authorized Bush Hog dealer.

Seat Belts

Inspect all seat belts for proper operation before each use of the vehicle.

1. Push the latch plate into the buckle until it clicks. The latch plate must slide smoothly into the buckle. A click indicates that it is securely latched.

2. Push the red button to make sure it releases freely.

3. Check the belt for wear, cuts or damage. If any irregularities are found, have the seat belt system checked and/or replaced by an authorized dealer.

The seat belt angles should be adjusted to suit the individual in that particular seat before driving. Make sure the seat belt angle is adjusted to the lowest possible lap position before riding.

1. To adjust, loosen the bolts on each end of the belts.

2. Reposition both the buckle and retractor. Tighten the bolts.

NOTE: On the Trail Hand model, the center belt does not self adjust. Before riding, pull on the strap to secure the belt on the lap of the center passenger.

⚠ WARNING

FAILURE TO FOLLOW THE AGE RECOMMENDATIONS FOR THIS VEHICLE COULD RESULT IN SERIOUS INJURY OR DEATH. NO ONE UNDER THE AGE OF 16 MAY OPERATE THIS VEHICLE. NO ONE UNDER THE AGE OF 5 MAY RIDE AS A PASSENGER IN THIS VEHICLE.

Tires

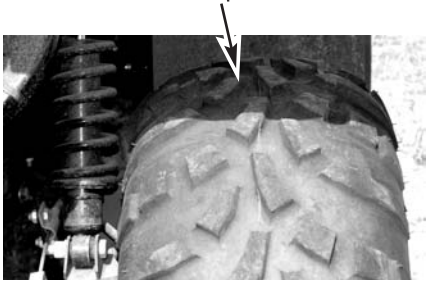
⚠ WARNING

OPERATING YOUR VEHICLE WITH WORN TIRES WILL INCREASE THE POSSIBILITY OF SKIDDING, LOSS OF CONTROL AND AN ACCIDENT, WHICH COULD RESULT IN SERIOUS INJURY OR DEATH. ALWAYS REPLACE TIRES WHEN THE TREAD DEPTH MEASURES 1/8" (.3 CM) OR LESS.

IMPROPER TIRE INFLATION OR THE USE OF NON-STANDARD SIZE OR TYPE TIRES MAY ADVERSELY AFFECT VEHICLE HANDLING, WHICH COULD RESULT IN VEHICLE DAMAGE OR PERSONAL INJURY. ALWAYS MAINTAIN PROPER TIRE PRESSURE. WHEN REPLACING TIRES, ALWAYS USE THE ORIGINAL EQUIPMENT SIZE AND TYPE.

Tire Tread Depth

Always replace tires when tread depth is worn to 1/8" (.3 cm) or less.



Wheel Lug Nuts

Inspect the lug nuts occasionally for tightness or missing nuts. Tighten to 35 ft. lbs.

⚠ WARNING

OPERATING YOUR VEHICLE WITH IMPROPERLY INSTALLED WHEELS WILL AFFECT VEHICLE HANDLING AND COULD CAUSE AN ACCIDENT RESULTING IN SERIOUS INJURY OR DEATH. MAKE CERTAIN WHEELS ARE INSTALLED PROPERLY.

Wheel Removal

1. Stop the engine, place the transmission in gear and engage the parking brake.

2. Loosen the lug nuts slightly.

3. Elevate the side of the vehicle by placing a suitable stand under the frame.

4. Remove the wheel lug nuts. Remove the wheel.

Wheel Installation

1. With the transmission in gear and the parking brake engaged, place the wheel in the correct position on the wheel hub. Be sure the valve stem is toward the outside and the rotation arrows on the tire point toward forward rotation.

2. Attach the lug nuts and finger tighten.

3. Carefully lower the vehicle to the ground.

4. Torque the lug nuts to 35 ft. lbs.

Lights

When servicing a halogen lamp, don't touch the lamp with bare fingers. Oil from your skin leaves a residue, causing a hot spot that will shorten the life of the lamp.

⚠ WARNING

POOR LIGHTING WHILE DRIVING CAN RESULT IN SEVERE INJURY OR DEATH. HEADLIGHT AND TAILLIGHT LENSES BECOME DIRTY DURING NORMAL OPERATION. WASH THE HEADLIGHTS FREQUENTLY TO MAINTAIN LIGHTING QUALITY.

HOT COMPONENTS CAN CAUSE SERIOUS BURNS TO SKIN. DO NOT SERVICE THE HEADLAMPS UNTIL THEY'VE COOLED SUFFICIENTLY.

Cleaning Your Vehicle

Keeping your vehicle clean will not only improve its appearance, but it can also extend the life of various components. With a few precautions, your vehicle can be cleaned much like an automobile.

The best and safest way to clean your vehicle is with a garden hose and a pail of mild soap and water. Use a professional type washing mitten, cleaning the upper body first and the lower parts last. Rinse with water frequently and dry with a chamois to prevent water spots. NOTE: If warning decals are damaged, contact your Bush Hog dealer for free replacement.

If a high pressure type car wash system is used, extreme care must be taken to avoid water damage to the wheel bearings, transmission seals, body panels, brakes, headlights and warning decals. Many expensive repair bills can result from using high pressure detergent systems.

NOTE: If a high pressure car wash is used, grease all zerk fittings immediately after washing. Also run the vehicle to evaporate any water that may have entered the engine or exhaust system.

Storage

If your vehicle is to be placed in extended or off season storage, the following steps should be taken to preserve its condition.

1. Perform all necessary repairs and thoroughly clean the vehicle.

2. Remove the spark plug and pour approximately one ounce of motor oil into the cylinder. Operate the starter for a few seconds and reinstall the spark plugs.

3. Remove the battery. Store it in a cool, dry place out of the sun.

4. Lubricate all suspension pivot points.

5. Block the vehicle so all tires are suspended off the ground.

6. Spray oil on all unpainted metal surfaces to prevent rusting. Avoid getting oil on rubber parts or in the brakes.

7. Lubricate all cables.

8. Tie a plastic bag over the exhaust pipe and air cleaner inlet to prevent moisture or small animals or insects from entering.

9. Cover the vehicle with a canvas cover. Do not use plastic or coated materials since they do not allow ventilation for the vehicle.

Removal From Storage

1. Check the battery electrolyte level and charge the battery if necessary. Install it in the vehicle.

2. Make sure the spark plug is tight.

3. Fill the tank with fuel.

4. Check all the points listed in the Pre-Ride Inspection section on page 29.

NOTE: Tightness of the bolts, nuts, and other fasteners should be checked by an authorized Bush Hog dealer.

5. Lubricate as outlined in the Periodic Maintenance Schedule.

Battery

Keep the battery terminals and connections free of corrosion. If cleaning is necessary, remove the corrosion with a stiff wire brush. Wash with a solution of one tablespoon of baking soda and one cup of water. Rinse well with tap water and dry off with clean shop towels. Coat the terminals with dielectric grease or petroleum jelly.

Be careful not to allow cleaning solution or tap water into the battery.

⚠ WARNING

BATTERY ELECTROLYTE IS POISONOUS. IT CONTAINS SULFURIC ACID. SERIOUS BURNS CAN RESULT FROM CONTACT WITH SKIN, EYES OR CLOTHING.

Antidote

External: Flush with water

Internal: Drink large quantities of water or milk. Follow with milk of magnesia, beaten egg, or vegetable oil. Call physician immediately.

Eyes: Flush with water for 15 minutes and get prompt medical attention.

Batteries produce explosive gases. Keep sparks, flame, cigarettes, etc. away. Ventilate when charging or using in an enclosed space. Always shield eyes when working near batteries. KEEP OUT OF REACH OF CHILDREN.

Replenishing Battery Fluid (Conventional Battery)

A poorly maintained battery will deteriorate rapidly. Check the battery fluid level often. The fluid level should be kept between the upper and lower level marks.

To refill use only distilled water. Tap water contains minerals that are harmful to a battery.

⚠ WARNING

IMPROPERLY CONNECTING OR DISCONNECTING BATTERY CABLES CAN RESULT IN AN EXPLOSION AND CAUSE SERIOUS INJURY OR DEATH. WHEN REMOVING THE BATTERY, ALWAYS DISCONNECT THE NEGATIVE (BLACK) CABLE FIRST. WHEN REINSTALLING THE BATTERY, ALWAYS CONNECT THE NEGATIVE (BLACK) CABLE LAST.

Battery Removal (Refer to photograph on next page)

1. Open the hood to access the battery.
2. Disconnect the negative (black) cable first.
3. Disconnect the positive (red) cable next.
4. Remove the nuts from the battery tie-down bracket and lift off the bracket.
5. Lift the battery out of the vehicle, being careful not to tip the battery sideways and spill electrolyte

⚠ CAUTION

IF ELECTROLYTE SPILLS, IMMEDIATELY WASH IT OFF WITH A SOLUTION OF ONE TABLESPOON OF BAKING SODA AND ONE CUP OF WATER TO PREVENT DAMAGE TO THE VEHICLE.

Battery Installation

1. Set the battery in its holder.
2. Install the battery tie-down bracket and tighten the nuts.
3. First connect the positive (red) cable.
4. Second connect the negative (black) cable.
5. Verify that cables are properly routed.

NOTE: When installing a new battery, make sure it is fully charged prior to its use. Using a new battery that has not been fully charged can damage the battery and result in a shorter life. It can also hinder vehicle performance.

Battery Storage

When the vehicle is placed in storage for three months or more, the battery should be removed, stored out of the sun in a cool, dry place and tested monthly. Before reusing, take the battery to your dealer for testing and recharging.

SECTION IV
ASSEMBLY

Attaching Occupant Protection Structure To Vehicle

(Refer to illustrations on following pages)

Remove occupant protection structure from shipping bundle and arrange weldments around the vehicle. Loosen all fasteners before beginning assembly.

Disconnect the front cross member from one front side frame member so the front frame weldments can be positioned independently from each other.

With the hood fully opened, position one of the front frame weldments into position and loosely bolt into place using 1/2 x 3" bolts and locknuts. Place opposite side frame weldment into position and fasten loosely into place.

Reposition the cross member and replace the bolts that were previously removed.

With rear components assembled as shown below, place bottom mounting plates into position on frame and join with front frame members. Fasten mounting plates to frame with 5/8 x 3" bolts and locknuts.

Fasten bottom panel to frame with 3/8 x 1" bolts and locknuts. Once the complete cab frame is in place securely tighten all fasteners.

Install seat belts to mounting locations on frame as shown in illustrations on next page.

Place seat back against rear of cab frame with the five studs extending through the matching mounting holes. Fasten to frame using 5/16" flatwashers and locknuts.

OPTIONAL EQUIPMENT

Consult with your Bush Hog dealer for availability of optional equipment. These items will have installation instructions supplied with the kits.

ITEMS TO CHECK:

Check oil level in the engine (see engine manual)

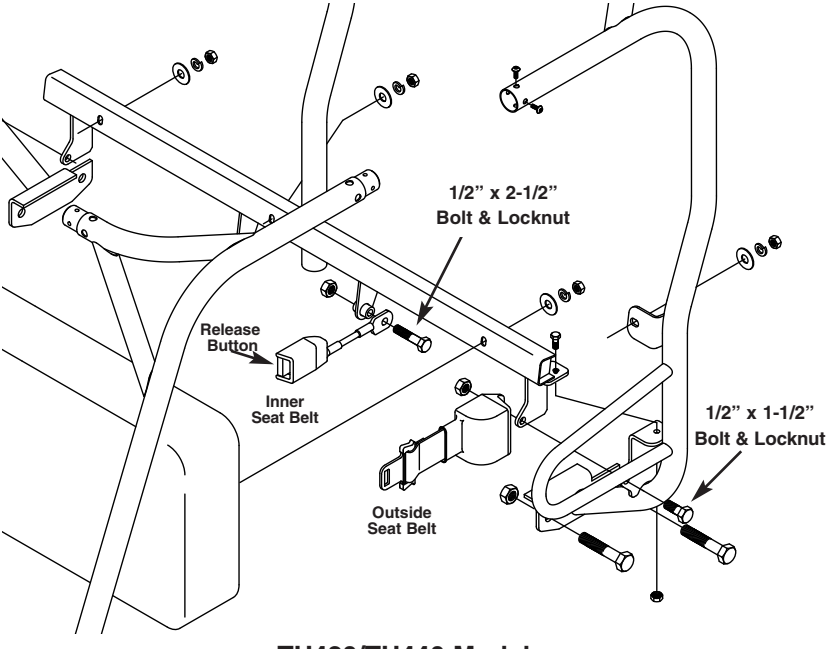
Check tightness of all fasteners, including bolts, lug nuts, and setscrews.

Check tire pressure.

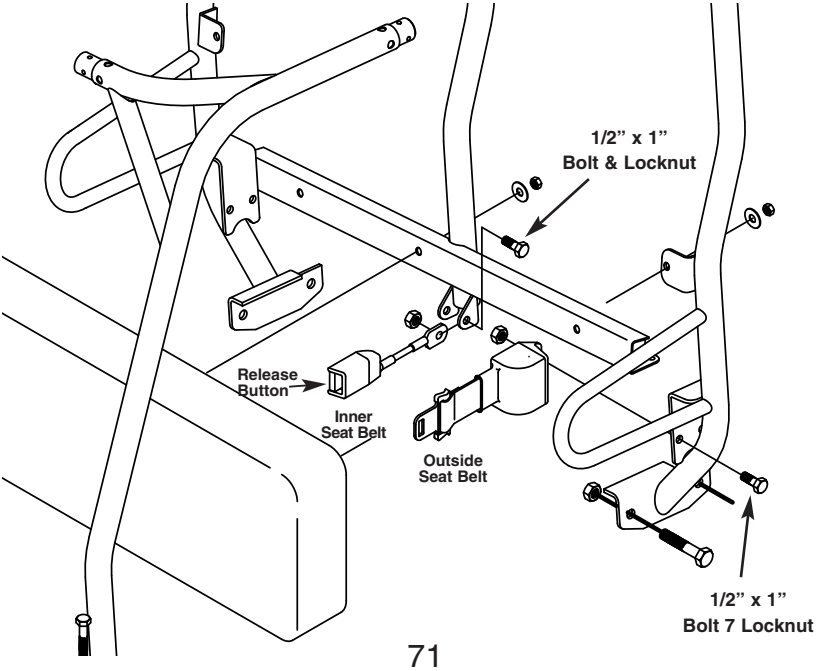
Seat Belt Installation

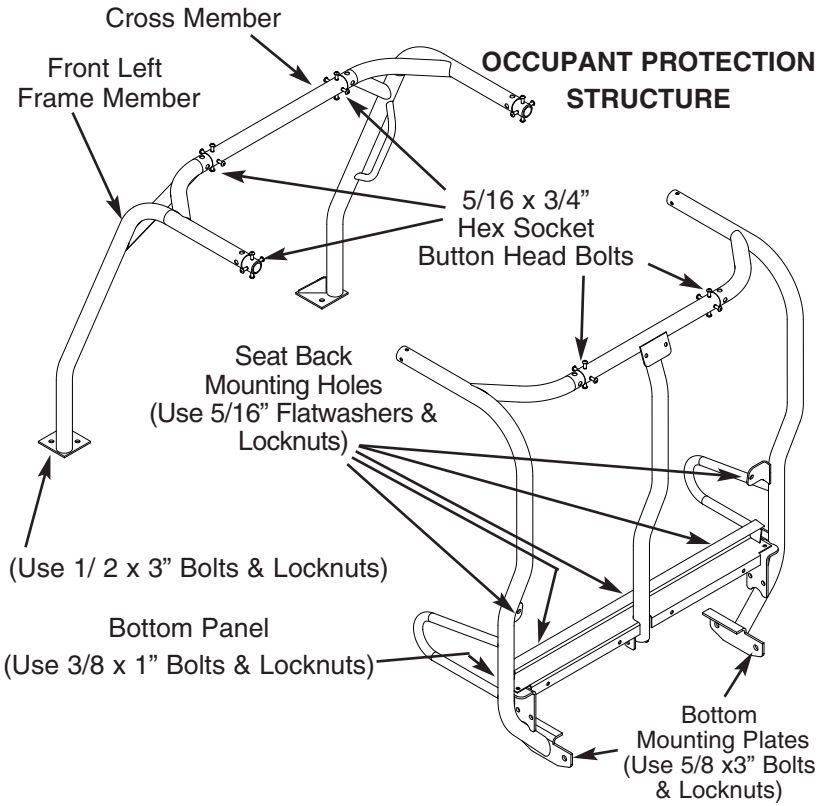
Install all seat belts so that the release button will be to the outside of the occupant when fastened.

TH4200/TH4400 Models



TH420/TH440 Models



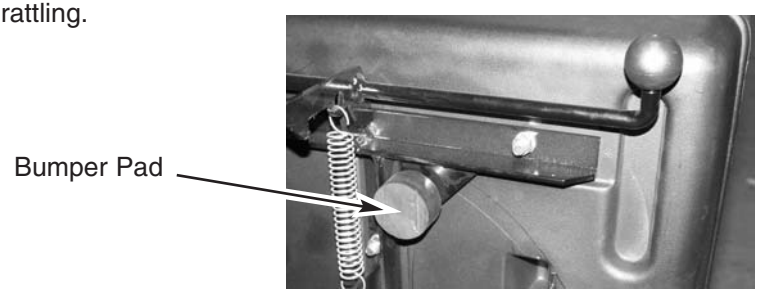


Rubber Bumper Pad Adjustment

The plastic bed of the Utility Vehicle is equipped with two rubber bumper pads located at the bottom front of the bed. These rubber bumpers are factory adjusted to prevent rattling when the bed is in the down position. If adjustment should be needed at a later time proceed as follows:

Manual Lift - Screw pads down enough so that slight down pressure on the front of the bed is needed to unlatch the lift handle.

Electric Lift - Lower bed, then screw pads down for a snug fit to prevent rattling.



TROUBLESHOOTING CHECK LIST

STARTER MOTOR WON'T TURN ENGINE:

- Gear shift lever not in neutral
- Battery discharged
- Battery leads do not make good contact with the battery terminals or ground on frame
- Fuse failure (check to find and correct the cause of the failure)

ENGINE CRANKS, BUT WON'T START:

- No fuel in tank
- Fuel filter clogged
- Water in fuel
- Choke is not used when engine is cold
- Air filter clogged or inlet blocked
- Engine flooded
- Fuel tank vent clogged
- Spark plug wire not on spark plug
- Spark plug fouled

ENGINE STOPS:

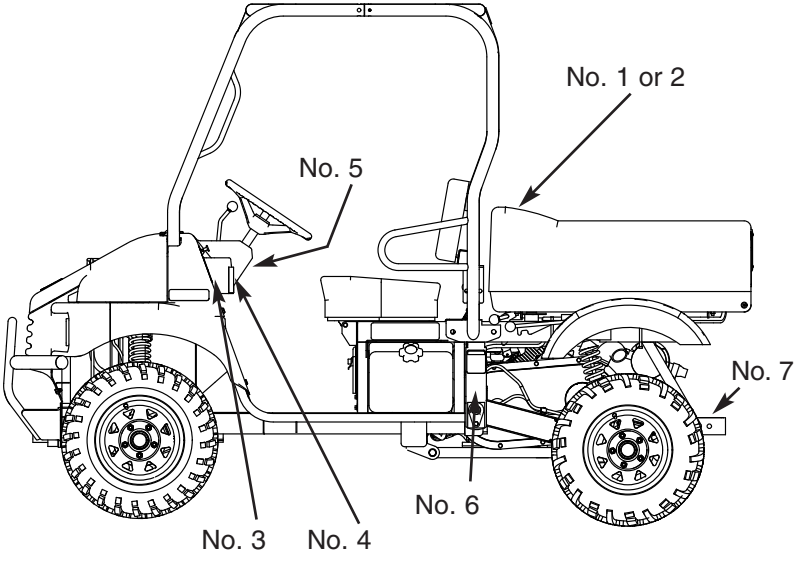
- No fuel in tank
- Water in fuel
- Fuel filter clogged
- Choke left on too long
- Air filter clogged or inlet blocked
- Fuel tank cap vent clogged
- Engine overheated
- Too much idling or low speed running (not enough air flow)
- Overloaded
- Fouled spark plug
- Engine oil low

NO POWER:

- Engine overheated
- Too much idling or low speed running (not enough air flow)
- Overloaded
- Wrong spark plug
- Engine oil low
- Compression leakage
- Valve clearance insufficient
- Fuel filter clogged
- Air filter clogged or inlet blocked
- Spark plug dirty or worn
- Choke left on
- Engine oil incorrect
- Water in fuel

SAFETY DECALS

To promote safe operation, Bush Hog supplies safety decals on all products manufactured. Because damage can occur to safety decals either through shipment, use or reconditioning, Bush Hog will, upon request, provide safety decals for any of our products in the field at no charge. Contact your authorized Bush Hog dealer for more information.



No. 1

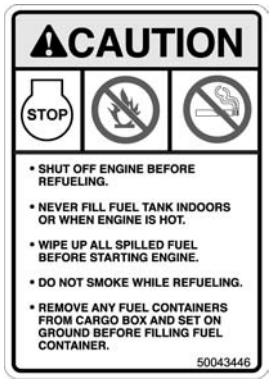
No. 2

No. 3

No. 4

No. 5

No. 6



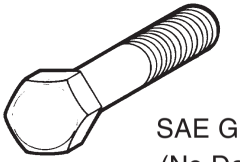
No. 7

TORQUE SPECIFICATIONS

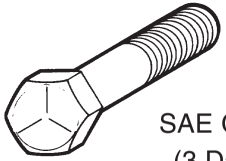
Proper toque for American fasteners used on Bush Hog equipment.
Recommended Torque in Foot Pounds (Newton Meters).*

AMERICAN

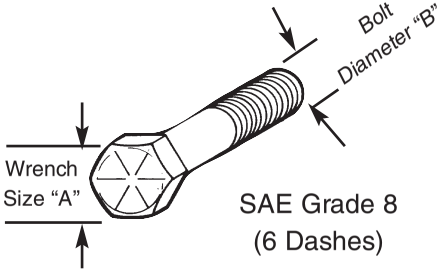
Bolt Head Markings



SAE Grade 2
(No Dashes)



SAE Grade 5
(3 Dashes)

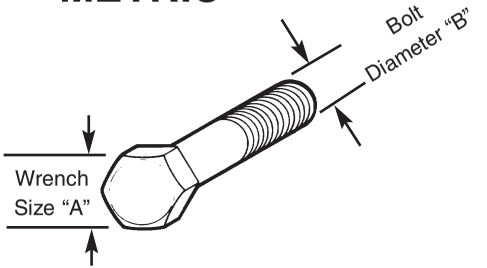


SAE Grade 8
(6 Dashes)

WRENCH SIZE (IN.) "A"	BOLT DIAMETER (IN.) "B" AND THREAD SIZE	SAE GRADE 2	SAE GRADE 5	SAE GRADE 8
7/16	1/4 - 2O UNC	6 (7)	8 (11)	12 (16)
7/16	1/4 - 28 UNF	6 (8)	10 (13)	14 (18)
1/2	5/16 - 18 UNC	11 (15)	17 (23)	25 (33)
1/2	5/16 - 24 UNF	13 (17)	19 (26)	27 (37)
9/16	3/8 - 16 UNC	20 (27)	31 (42)	44 (60)
9/16	3/8 - 24 UNF	23 (31)	35 (47)	49 (66)
5/8	7/16 - 14 UNC	32 (43)	49 (66)	70 (95)
5/8	7/16 - 20 UNF	36 (49)	55 (75)	78 (106)
3/4	1/2 - 13 UNC	49 (66)	76 (103)	106 (144)
3/4	1/2 - 20 UNF	55 (75)	85 (115)	120 (163)
7/8	9/16 - 12 UNC	70 (95)	109 (148)	153 (207)
7/8	9/16 - 18 UNF	79 (107)	122 (165)	172 (233)
15/16	5/8 - 11 UNC	97 (131)	150 (203)	212 (287)
15/16	5/8 - 18 UNF	110 (149)	170 (230)	240 (325)
1-1/8	3/4 - 10 UNC	144 (195)	266 (360)	376 (509)
1-1/8	3/4 - 16 UNF	192 (260)	297 (402)	420 (569)

TORQUE SPECIFICATIONS

METRIC



Numbers appearing on bolt heads indicate ASTM class.

*Use 75% of the specified torque value for plated fasteners. Use 85% of the specified torque

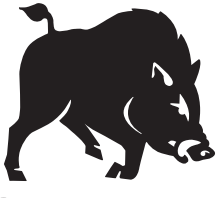
Proper torque for metric fasteners used on Bush Hog equipment. Recommended torque in foot pounds (newton Meters).*

Proper torque for metric fasteners used on Bush Hog equipment. Recommended torque in foot pounds (newton Meters).*

WRENCH SIZE (mm) "A"	BOLT DIA. (mm) "B"	ASTM 4.6	ASTM 8.8	ASTM 9.8	ASTM 10.9
8	5	1.8 (2.4)		5.1 (6.9)	6.5 (8.8)
10	6	3 (4)		8.7 (12)	11.1 (15)
13	8	7.3 (10)		21.1 (29)	27 (37)
16	10	14.5 (20)		42 (57)	53 (72)
18	12	25 (34)	74 (100)	73 (99)	93 (126)
21	14	40 (54)	118 (160)	116 (157)	148 (201)
24	16	62 (84)	167 (226)	181 (245)	230 (312)
30	20	122 (165)	325 (440)		449 (608)

NOTES:

NOTES:



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